1964-1966

21st Biennial Report of the North Carolina Department of

CONSERVATION & DEVELOPMENT

In our Research Triangle are three of the nation's leading universities and more than 450 scientists.

A good reason to consider North Carolina for your new plant.

And here's another reason:

North Carolina has some of the most spectacular natural beauty in eastern America. In our western region are the towering peaks of the Blue Ridge and Great Smoky mountains, green in summer, glowing in autumn. In our east, a historic coast of golden sun and sand. And in our metropolitan areas is an unusual appreciation of the artistic and aesthetic. Altogether, it's an ideal environment for your family and your key employees. For all the beautiful facts on North Carolina, get in touch with Governor Dan Moore or J. W. York, Chairman, Department of Conservation and Development, Raleigh, N.C.

North Carolina

To His Excellency
The Honorable Dan Moore
Governor of North Carolina

In compliance with the Statutes of North Carolina, I am transmitting herewith the report of the Department of Conservation and Development for the biennium ending June 30, 1966.

Respectfully

Dan E. Stewart

Director

THE COVERS

North Carolina advertisements, representative of those produced by the Travel and Promotion Division under direction of the Travel and Promotion Committee of the Board of Conservation and Development, and published nationally during the biennium, appear on inside front cover, inside back cover, and on the back page. During the biennium there were 204 display advertisements in 75 newspapers and magazines and 936 air announcements through 52 television stations.

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FOREWORD

The mission of the Department of Conservation and Development is to conserve and develop and to promote the wise use of the natural resources of North Carolina for the common good of all her people.

This report is an account of the department's stewardship for biennium ending June 30, 1966.

In the interest of readability, much detail has been omitted. Those persons wishing more information about specific phases of the department's programs need only to contact the Department or the Division directly concerned.

COMMERCE AND INDUSTRY

Industrial activity in the biennium 1964-66 was the highest ever recorded in North Carolina.

A continuation of a high level of national prosperity contributed to this period of growth. Also, the North Carolina development program received outstanding assistance from its advancing industrial education program, from substantial progress in the field of basic and applied research, and from improved local and area development procedures throughout the State.

Following is a summary of gains for the two bienniums, 1964-66 and 1962-64:

BIENNIAL SUMMARIES

	New	Investments	Added Payrolls	Added Employees
1964-66	361	$391,470,000	$158,137,000	43,216
1962-64	340	382,749,000	103,651,000	30,228
	Expansions			
1964-66	759	$581,412,000	$115,493,000	31,386
1962-64	890	264,266,000	79,717,000	23,359
	New and Expansions			
1964-66	1,120	$972,882,000	$273,630,000	74,602
1962-64	1,230	647,015,000	183,368,000	53,587

The above figures are noteworthy because while the total number of projects for the 1962-64 biennium exceeded by 110 the number for 1964-66, total capital investments went up 50.36%, payrolls increased 49.22%, and added employees rose by 39.22% in this latter biennium.

GAINS BY MAJOR CLASSIFICATIONS

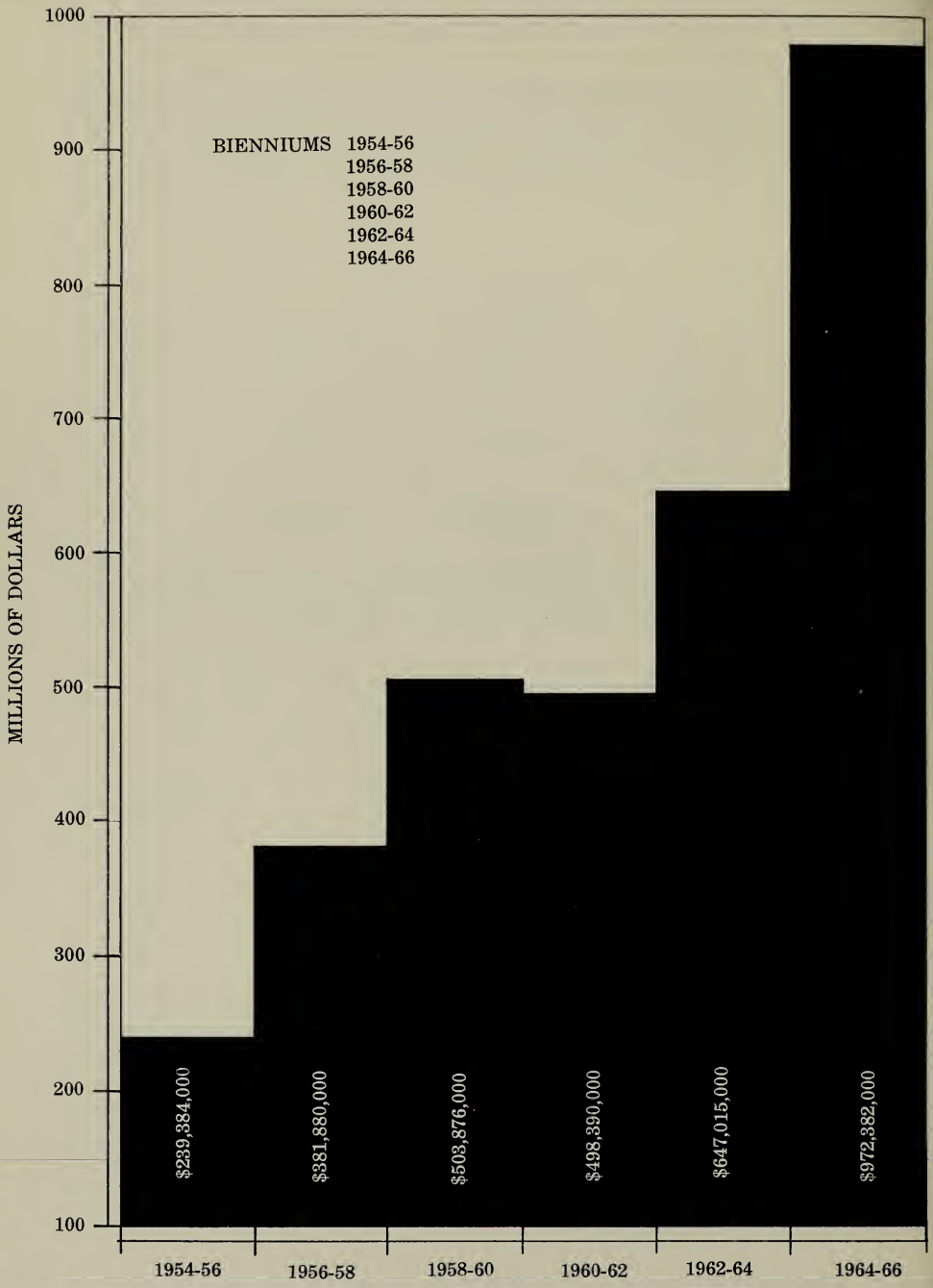
BIENNIUM 1964-66

	Investment Totals	Payroll Totals	Add Employees Totals
Textiles	$340,349,000	$90,178,000 (1)	24,781 (1)
Metalworking	155,850,000	69,311,000 (2)	16,346 (2)
Chemicals	150,440,000	20,298,000 (5)	4,751 (5)
Paper & paper products	86,262,000	5,326,000 (8)	1,191 (8)
Stone, clay, gass	52,500,000	5,628,000 (7)	1,354 (7)
Furniture	41,968,000	20,299,000 (4)	5,874 (4)
Apparel	27,199,000	39,016,000 (3)	12,808 (3)
Food & kindred products	22,549,000	5,761,000 (6)	1,770 (6)

The above summary shows that textiles ranked #1 in all three categories, investments, payrolls, and added employees. Metalworking rated second spot in all three categories. Apparel ranked #3 in added employees and in payroll gains. Rank is denoted by number in parentheses for payrolls and employees.

Some of the firms announcing their first new manufacturing facilities in North Carolina during the 1964-66 biennium include: Anaconda Wire & Cable Company; Associated Springs, Inc.; B. F. Goodrich; Divco Wayne Industries, Inc.; General Time Corporation; Garlock, Inc.; Gilbert & Baker Manufacturing Company; General Tire & Rubber Company; Ideal Fastener Corporation; IBM; Johnson & Wimsatt; Mallinckrodt Chemical Works; Rohm & Haas; Rockwell Manufacturing Company; Sherwin-Williams; Southern Devices, Inc.; Sylvania Electric Products, Inc.; Varco Steel Corporation; and Veeder Root, Inc.

NORTH CAROLINA
CAPITAL INVESTMENTS: NEW AND EXPANDED INDUSTRY



The extent of diversification achieved by North Carolina during the 1964-66 biennium is partially revealed by the firms listed above. Significant contributions have also been made towards industrial diversification through the substantial growth of both basic and applied research activities by manufacturing firms established in various sections of the State.

During the latter part of this biennium a serious shortage of available labor was reported by several sections of the State, virtually removing these areas from consideration by new and expanding firms. From all information available it appears that these reported shortages have developed primarily in areas where large concentrations of specific types of manufacture have occurred and do not actually reflect the overall availability of labor picture in the areas involved. The impact of vocational education through the Community Colleges and Industrial Education Centers is already being felt in easing critical shortages of workers in some job classifications.

Since President Johnson's request to firms to delay large capital expansion expenditures for the time being came near the close of the biennium, its effects on North Carolina's development has not been noticeable.

A comparison of total investments for new and expanded industries in North Carolina for the bienniums 1954-56 and 1964-66 shows a gain of over 306% during this 12-year period for an average increase for each biennium of 25.5%.

As previously noted, the largest gain shown is the biennium 1964-66 over 1962-64. The actual increase over the previous biennium amounted to 50.36%.

Community & Industrial Services

Since its beginning the primary activities of this Section have been that of assisting communities to build effective development programs and serving the needs of existing industry.

While the work of the Section had been effective, it was greatly augmented when in November, 1965, five Regional Offices of the Commerce and Industry Division were established and assigned to the Community and Industrial Services Section for administration. Each Regional Office is engaged in the same work as is the Section's staff in Raleigh.

Community Services

The program in this area included a wide range of activities with communities and, in some cases, counties. Working with the communities, assistance is given in creating development organizations, gathering plant location data, developing industrial site information and in other ways to help develop a package that can be presented to an industrial prospect interested in plant location.

Industrial Services

As in working with communities, working with existing industry is an extremely varied field but one that is extremely important in total economic development. Assistance in finding sources of supply of raw materials and components, locating sources of contract manufacturing, certain assistances in marketing, liaison with other State and Federal agencies and assisting with expansion are just a few of the areas of activity with existing industry.

All inquiries reaching the Commerce and Industry Division for sources of supply and for sources of contract manufacturing are handled by the Section. In addition, regular personal visits are made to existing firms and many of their needs in these respects are ascertained with these visits—as are their needs for other services.

New and Expanded Industry

Although the staff of the Section is not regularly assigned to work with industrial prospects, there are conditions under which this work is being done. These conditions are: (1) In-state manufacturers seeking additional in-state locations; and (2) Groups or individuals attempting to establish new industry.

The Section has been engaged in these activities for several years, but this has greatly increased with the creation of Regional Offices. With increased contact with existing industry, by having Regional Representatives in the field, many more expansion plans, particularly those involving new sites, are being known soon enough for the Section to assist in expansion locations. By being closer to all the people, the Regional Representatives are also more accessible to those planning new firms.

Regional Offices

While the establishment of Regional Offices has been referred to earlier, some comments should be made as to their total contribution to the effectiveness of the Section's work and their relationship to other activities in the Division.

By being closer to all sections of the State, Regional Offices have greatly increased the Section's effectiveness by being more available to communities and industry needing assistance of varied types. Both service to industry and community assistance have greatly increased since establishment of these offices in November, 1965.

Prior to November, 1965, there had been no really effective way whereby the Division could actively seek new plant sites and completed community plant location data. This activity is vital to a successful plant location program. Since November, 1965, a total of 33 new plant sites have been registered through the Regional Offices as have completed data forms on 41 communities. This represents a drastic increase.

By assistance to Development Representatives in arrangements for inspection trips with industrial prospects into any region, much of the time previously spent by these men has been eliminated in favor of more direct prospect contact.

RESEARCH AND STATISTICS SECTION

This Section collects and collates economic information that forms the major tools used by the industrial development representatives in presenting the advantages and attractions of the State for industry. Allied development agencies rely heavily on this Section for information also.

In addition, the Section is responsible for gathering and tabulating data on a continuing basis of the State's industrial growth. This record includes the location of new plants, their products, proposed employment and investment in each enterprise. Similar data is assembled on expansions of existing industries.

These reports, published quarterly, semi-annually, and annually, constitute the only source of such information and furnish background statistics for the measurement and effectiveness of the development program.

The responsibility for literature used in the development program rests on this Section. Methods of compiling, tabulating and distributing these materials are constantly being improved.

One of the most important projects ever undertaken in the Division and certainly one of the most beneficial aids ever rendered to the cities and towns in the State was the series of Community Economic Improvement Bulletins instigated and carried out during this biennium. Once a month for almost a year, each community received a Bulletin which explained step by step and in minute detail the know-how of getting the town ready for industry and helping them to carry out a successful industrial development program.

New and improved community data forms have been initiated during this period and are now in use. Realizing the importance of having certain information on communities and sites (which is requested by almost every industrial prospect) on file in the same form, much time was spent in perfecting the form and sending it to the communities in the State to be filled in and returned for use.

TECHNICAL SERVICES SECTION

The Technical Services Section fills requests from the general development staff and other sections of the Division. Requests are normally related to markets, materials, and industrial properties, but may also concern any locational factor such as transportation, labor, or available services.

Markets

Information on markets may range from a complete statistical presentation of a state, regional, or national activity, down to a short list of potential buyers of a particular product. Surveys sometimes provide data for reports, and are made by mail, telephone, or personal visit.

Reports by the Section on major areas of activity such as furniture, textiles, machinery, construction, and containers have been of interest to firms in these fields, as well as to suppliers to these firms and to users of the products.

Special Presentations

Since other considerations such as labor availability, transportation facilities, and community factors are mandatory in plant site selection, the Section often includes these in presentations. In order to facilitate these complete presentations, special projects have been initiated. These included a tabulation of water and waste treatment capabilities of larger communities, and the compilation of concise but detailed descriptions on major communities in North Carolina.

The majority of requests to the Technical Services Section point out the need for more current and detailed data on North Carolina firms. This is necessary for precise market investigations and for locating suppliers and buyers.

Industrial Properties

Industrial property activities include the collection, maintenance, and presentation of data on buildings and sites currently available for industrial use. Continuing efforts are made to establish routines to efficiently handle the large input of data from across the State. Data collection forms have been designed to provide adequate presentation to prospects without additional processing, but more finished presentations are made as time allows. New techniques have been adopted to cut the time required for a finished site presentation from four hours to about 30 minutes.

FOOD INDUSTRIES SECTION

The objectives of the Food Industries Section are to develop North Carolina's food processing industry by attracting and assisting out-of-state firms in locating facilities in North Carolina, assisting in expansion of existing industry, startng new food processing operations, and developing allied firms and services which improve the competitive position of North Carolina food processors.

The Food Industries Section also assists other State agencies in creating interest on the part of farmers to produce specific products for processing. This is largely an educational program.

The Section also coordinates the demands of industry with other State agencies in attempting to place the correct emphasis on research and development.

In order to accomplish its objectives, the Section has felt the need to conduct feasibility studies for the following commodities: corn, soybeans, vegetables, fruit, and turkeys.

FINANCING

The Financing Section has grown substantially in importance to the overall plant location efforts of the Division. During this biennium, the Financial Consultant has maintained contact with major lenders throughout the country and has studied the methods whereby industrial projects may be financed with the most attractive terms.

The work load of this Section has increased substantially with the increasing interest in local financing arrangements including the formation of non-profit development corporations and the increased interest in tax exempt revenue bonds.

This Section has kept in constant touch with Federal programs of financial assistance to new and expanding plant locations. During the biennium, assistance has been given in the formation of approximately twenty development corporations and in arranging of Small Business Administration and Economic Development Administration loans. This office has worked closely with the Business Development Corporation in the arranging of a number of industrial loans.

AVIATION

In November, 1965, the Commerce and Industry Division established an Aviation Section to aid North Carolina communities and counties in coordinating plans for airport development.

The decentralization of industry has placed increased importance on airports for the small community to which industry has and is moving. To the extent that a community is otherwise attractive to an industry, air transportation may well be the critical factor which affects the choice of location.

This Section has been acting in liaison between the sponsor for airport development and the Federal Aviation Agency, the Appalachia Commission, and the Economic Development Administration, each of which has Federal funds available for airports.

North Carolina has not kept pace with other states, and especially with our neighboring states in airports and aviation, and this has been caused by two primary reasons:

(1) The State Supreme Court has held that tax money, without a vote of the people, cannot be expended to construct or improve airports.

(2) Unlike thirty-three other states and all of our neighboring states, North Carolina does not have a State aid-to-airports program whereby they assist the smaller communities financially.

It is hoped that a State aid program will be favorably considered in the forthcoming General Assembly.

EXPORT SECTION

Outstanding events for the Export Section in this biennium included sponsorship of the Food Sales Seminar which was held in Raleigh on January 19, 1965, and co-sponsorship of the World Trade Festival held in Charlotte May 17-21, 1965.

Highlights of activities for 1966 included the Furniture Fair in Cologne, Germany, where sixteen exhibitors—seven of these from North Carolina—took part in the U. S. sponsored exhibit. The sixteen exhibitors from the U. S. sold $800,000 worth of furniture during the one-week show and took orders for an estimated $4 million for the remainder of 1966. Connected with this trip were visits to eight European countries, which resulted in the following planned program for October-November 1966:

North Carolina Apparel and Household Textile Show
North Carolina Trade Mission
North Carolina Industrial Development Mission
North Carolina Travel Mission

The North Carolina Apparel and Household Textile Show represents the first exhibition of the products of a single state in U. S. Trade Center in Europe. The total program as planned represents the most ambitious program ever attempted to date by a state in the European market. The Mission starts as this goes to press.

Participating in programs such as these, and continued increasing demands by North Carolina manufacturers for assistance in entering and developing export markets indicate a need for additional manpower in this Section to fully implement the progress made thus far.

RESEARCH

Research and development research experienced a rapid growth during the past biennium in North Carolina. Among the major projects begun in the period of the 1964-66 biennium are the following:

R. J. Reynolds Tobacco Company—Product Development Center, Winston-Salem

Burlington Industries, Inc. Research and Development Center, Greensboro

Environmental Health Center—Public Health Service—Research Triangle

Triangle Universities Computation Center—Universities of N. C. at Chapel Hill, Raleigh, and Duke University

Research and Development Laboratory—Hercules, Inc.—Research Triangle

Textile Research and Development Center—Beaunit Corporation, Research Triangle

Collins and Aikman Research and Development Laboratory—Charlotte

IBM Research Triangle Manufacturing Laboratory—Research Triangle

COMMERCIAL AND SPORTS FISHERIES 1964-1966

Upon recommendation of the Commercial Fisheries Study Commission, the 1965 General Assembly rewrote all coastal fisheries laws. The new laws, which became effective January 1, 1966, renamed this Division the Division of Commercial and Sports Fisheries, and charge it with stewardship of the State's marine and estuarine resources. The new laws further define "marine and estuarine resources" as "all fish, except inland game fish, found in the Atlantic Ocean and in coastal fishing waters; all fisheries based upon such fish; all uncultivated or undomesticated plant and animal life, other than wildlife resources, inhabiting or dependent upon coastal fishing waters; and the entire ecology supporting such fish, fisheries, and plant and animal life."

A definite shift in Division responsibilities began during the 1962-64 biennium, with increased emphasis and concern being directed toward the condition and biology of our total fishery resource, regardless of the sport or commercial uses to which it is subjected. Previous responsibilities were concerned primarily with the enforcement of laws and regulations which pertained to the harvest, sale and transport of fish and fisheries products. Current fishery laws strengthen this new philosophy and further empower the Division to . . . "Collect such statistics, market information, and research data as is necessary or useful to the promotion of sports and commercial fisheries in North Carolina and the conservation of marine and estuarine resources generally; conduct or contract for research programs applicable to resources generally and to methods of cultivating, harvesting, marketing, or processing fish. . . ."

Following the guidance of the General Assembly, the Division has given increasing attention to all factors which influence coastal fisheries, has worked with numerous state and federal agencies concerned with these resources, and has greatly increased its research and development efforts.

Activities of the Division are organized into three sections: Law Enforcement, Research and Development, and Shellfish Sanitation.

DIVISION ACTIVITIES

Law Enforcement

This section enforces coastal fisheries laws in more than 3,500 square miles of coastal waters. The total area is divided into three districts, each of which is the responsibility of a District Supervisor. Law enforcement personnel utilize inboard and outboard patrol boats, radio-equipped cars, and float aircraft in the execution of their duties.

The level and condition of operating equipment continues to improve; 26 cars, 6 outboard patrol boats, 7 outboard motors, 6 boat trailers, 13 radios, and numerous other equipment were purchased during the biennium. The patrol boat "Neuse", our first radar-equipped vessel, replaced the federal-surplus vessel "Point of Marsh", in June 1966. One float airplane was also replaced in June 1966.

Following the training program established during the last biennium, the Institute of Government of the University of North Carolina conducted in-service training schools for existing law enforcement personnel during August 1964 and January 1966. The in-service schools provided a forum in which to discuss enforcement problems and to recommend improvements in regulations and enforcement procedures, and to explain the new fisheries laws. Pre-service schools were used as training media for prospective Inspectors.

During September, 1965, the Commercial Fisheries Committee of the Board of Conservation and Development held public hearings at Manteo, Morehead City, and Wilmington, at which time they discussed proposed changes in fisheries regulations with the public. 1966 Coastal Fisheries Regulations were enacted at the October, 1965, Board meeting and were consolidated with

the new statutes, published, and distributed to fishermen during December, 1965.

Research and Development

This section was created in August, 1964, with the employment of James T. Brown, a graduate fisheries biologist, as section chief. The section's responsibilities include conducting applied research and development projects in estuarine and marine environments, contracting research projects to other agencies, planning and supervising the oyster rehabilitation program, publishing a quarterly newsletter, reviewing coastal alteration projects relative to their effects on marine and estuarine resources, and exploratory fishing.

The Division is currently engaged in two research projects under the provisions of PL 88-309 (The Commercial Fisheries Research and Development Act of 1964), which provides for federal reimbursement of up to 75% of the project costs. A study of shrimp population dynamics, under the direction of Edward G. McCoy, was initiated in February, 1966. The objectives of this project are to determine patterns of shrimp distribution, growth, migration, and mortalities through mark-recapture methods. 9,597 brown-spotted shrimp and 6,736 brown shrimp have been marked and released in Jarretts Bay and North River (Carteret County) and 642 brown-spotted shrimp and 170 brown shrimp have since been returned by fishermen and dealers. Preliminary analysis of returns indicates a definite southward migration pattern, through Barden's and Beaufort Inlets and along the inshore ocean, for both species. Some shrimp were returned from as far as 150 miles from their release point. In no case, however, were individuals recovered any significant distance eastward or northward of their release site, nor did any re-enter the estuaries after leaving.

A project to develop three-dimensional oyster culture techniques adaptable to North Carolina waters, under the direction of Howard L. Marshall, was initiated in May, 1966. Preliminary evaluations of synthetic cultch materials are underway in Shallotte River (Brunswick County).

Prior to the creation of the Research and Development Section, all Division-sponsored research was contracted to other agencies. Although the Division will continue to expand its internal research capability, some projects requiring special equipment or sophisticated laboratory procedures are still being contracted. Results of contract research conducted during this biennium have been published as the following Special Scientific Reports:

No. 1 North Carolina Shell Survey
No. 2 Preliminary Report of Studies on Artificial Culture of Clams
No. 3 A Postlarval Shrimp Survey in North Carolina
No. 4 Interim Report, North Carolina Sport Fishing Survey
No. 5 1962 Trash Fish Study in North Carolina
No. 6 Preliminary Observations on Bacteriological quality of Fresh Blue Crab Meat
No. 7 1964 Trash Fish Study in North Carolina
No. 8 Studies of the quality of the Scallop Adductor Muscle
No. 9 Preliminary Studies on the Flavor and quality of Fresh North Carolina Blue Crab Meat

Contract Research projects now underway include:

1. Studies on Macroplanktonic Crustaceans and Ichthyoplankton of the Pamlico Sound Complex (PL 88-309)—to the Institute of Fisheries Research, University of North Carolina.
2. A study of the quality of North Carolina Scallops (PL 88-309)—to the Department of Food Science, North Carolina State University.
3. Population Estimation of Spawning Striped Bass, **Roccus saxatilis**, in the Roanoke River, N. C.—to the Department of Zoology, N. C. State University.

The Research and Development Section works cooperatively with the Law Enforcement Section in carrying out the oyster rehabilitation program. Biolo-

gists designate planting areas, estimate quantities of shells and oysters to be planted, and evaluate results of plantings. Inspectors coordinate activities with local fishermen and supervise the actual planting operations. In October, 1965, the Board of Conservation and Development approved the designation of public Oyster Management Areas throughout the oyster-producing region. These areas will be managed on a long-term basis for maximum oyster production, and will be open to public oystering when conditions warrant. Oyster and shell plantings (in U.S. standard bushels) are summarized below:

	Spring 1965	Spring, 1966	Total
Oysters	149,917	112,180	262,097
Shells	179,242	235,568	414,810
Total	329,159	347,748	676,907

During the spring of 1965, the first designated seed-oyster management area was planted near the southern end of Roanoke Island (Dare County). Additional seed-oyster areas were established in Ward Creek (Carteret County) and in White Oak River (Onslow County) in 1966. Seed oysters produced on these areas will either be used in the State's plantings of public bottoms or sold to private lessees, at cost, for planting on their beds.

The North Carolina Commercial Fisheries Newsletter has been published quarterly since the fall of 1964. This periodical describes activities of the Division, reports results of research projects, covers current events in coastal fisheries, and serves as an educational medium for the Division. About 9,000 copies of each issue have been distributed free to purchasers of commercial fishing licenses, and to all other interested persons upon request.

Division biologists participate in the review of all Corps of Engineers projects in coastal waters and all private engineering projects requiring a Corps permit. During March, 1965, maintenance dredging along the Intracoastal Waterway in Brunswick County resulted in extensive damage to local oyster bottoms. Following a series of conferences with Corps of Engineers' personnel, a procedure for coordinating the State's review of such activities through the Department of Water Resources was developed, and has been in use since September, 1965. Under this procedure, the Department of Water Resources receives reports of all proposed Corps projects and all applications for construction permits in navigable waters. Copies are distributed to all interested State agencies, comments returned and consolidated, and an official statement prepared by the Department of Water Resources and transmitted to the Corps. Through this procedure, all state resource agencies receive proper notification, and their comments and recommendations are accorded considerable importance in planning and execution of the projects. An informal working agreement with the District Engineer's Office (Corps of Engineers), executed in September, 1965, has permitted Division biologists to cooperate actively in the early planning stages of Corps projects and has greatly facilitated liaison between the Corps and the Division.

The 1965 General Assembly appropriated funds for the acquisition of an exploratory fishing vessel to be used in locating populations of commercial fishes off the North Carolina coast and developing better means of catching them and transporting them ashore. In late summer, 1965, Drs. A. F. Chestnut and W. W. Hassler, Captain David Beveridge, and Clayton Fulcher, Jr., were asked to serve as an informal advisory group to assist in procuring an architect and designing the vessel. Potter and McArthur, Inc., of Boston, Massachusetts, was awarded the design contract in September, 1965, and delivered final construction plans the following June. Captain Beveridge was employed as master of the vessel, beginning May 1, 1966, has been engaged in the final planning since that date, and will assist in supervising construction. Present plans include construction by a North Carolina shipbuilder and delivery of the completed vessel in the early fall of 1967.

Although the Research and Development Section is still in its infancy, results are already being applied to the Division's overall program. Techniques for detecting altered scallops (as a result of swelling in freshwater) developed through research, are being used by law enforcement officers; data obtained from shell and oyster plantings reveal which areas are being efficiently man-

aged and indicate possible changes in management policy; distribution of the newsletter has aroused public awareness of the value of North Carolina's coastal fisheries and the complex problems besetting their efficient management; greater emphasis on the relationship between coastal engineering and fisheries resources has produced increased coordination of all groups engaged in such activities.

No efficient management program of these complex resources can be executed, however, until we have available considerably more scientific information concerning them. During the next biennium we hope to initiate a district biologist program, consisting initially of six persons stationed in various coastal areas. They will secure information vital to the development of sound management policy, including inventories of fisheries resources in each district, data on species present, and changes in populations and correlative environmental factors.

Shellfish Sanitation

The cooperative shellfish sanitation program, which has been functioning since 1925, consists mainly of certification of shellfish for interstate and intrastate shipping, in accordance with State laws and regulations and the National Shellfish Sanitation Program. Shellfish establishments are inspected, approved, and graded to determine the degree of sanitation compliance. Assistance is rendered in design and layout of new processing plants.

Hydrographic studies are made of all the shellfish areas of the State in connection with laboratory examinations of shellfish growing waters. On the basis of these extensive surveys, recommendations are made to the Board of Conservation and Development as to the public health suitability of certain waters for harvesting shellfish for direct marketing. Samples of shellfish and crustacea meats are subjected to laboratory examinations to determine sanitary quality. This affords the industry a degree of quality control. A central shellfish laboratory is located in Morehead City to serve the central coastal areas; a mobile laboratory serves the southern and northern areas.

Shoreline surveys were made along tidal estuaries to locate and institute correction of unsanitary sewage disposal conditions. During the biennium more than 9,000 private premises were inspected in this project. Very little has been accomplished in obtaining sanitary disposal of wastes from boats that are equipped with toilets.

During the biennium more than 5,000 bacteriological examinations were made of shellfish growing water samples. The yearly averages of certifications issued to shellfish dealers were: Shellstock Dealers, 121; Shucking Plants, 46; Crustacea Meat Plants, 24. Sixteen new shellfish plants were built. There were 2,491 sanitary inspections made of the shellfish establishments.

The 1965 General Assembly authorized the Board of Health to make and enforce regulations concerning the sanitary aspects of the harvesting, processing, and handling of shellfish and crustacea, and transferred certain funds, personnel, and equipment involved in shellfish sanitation from the Department of Conservation and Development to the Board of Health. In addition, the two State agencies were authorized to enter into an agreement respecting the duties and responsibilities of each agency as to the harvesting, processing, and handling of shellfish and crustacea. An agreement on cooperative policies is currently in effect and appears to be working very nicely as attested by an official U. S. Public Health Service program rating of 93%.

FISHERIES PRODUCTION

Species	1964-65 Pounds	1964-65 Value to Fishermen	1965-66 Pounds	1965-66 Value to Fishermen
Alewives	12,825,761	$ 132,601	12,512,990	$ 131,811
Bluefish	508,008	59,518	699,577	47,251
Butterfish	314,788	26,833	405,483	26,826
Cabio	11,292	659	9,848	443
Carp	145,094	4,352	101,579	3,684
Catfish	1,432,420	143,243	1,784,618	242,573
Croaker	1,839,107	133,922	1,321,619	65,114
Black Drum	93,741	5,274	116,016	6,961
Red Drum or Redfish	92,291	8,322	73,299	8,777
Eels	47,767	2,195	44,765	2,013
Flounders	3,705,873	755,134	4,227,140	857,834
Groupers	1,430	114	807	64
Grunt	1,475	142	659	66
Harvest Fish	109,015	6,743	58,131	5,213
Herring, Thread			1,074,680	13,853
Hickory Shad	202,563	7,047	167,708	5,478
King Mackerel	87,539	17,508	139,483	28,297
King Whiting	1,470,930	136,624	1,009,226	71,851
Mackerel (Boston)			12,619	631
Menhaden	158,434,183	1,952,609	143,229,508	1,858,371
Mullet	1,080,919	72,016	1,460,380	100,224
Pigfish	85,953	7,348	80,723	7,014
Pompano	6,445	1,604	11,928	3,011
Sand Perch	8,885	283	3,540	224
Scup or Porgy	977,904	125,625	1,760,849	105,630
Sea Bass	1,011,955	142,493	1,069,266	135,741
Trout, Gray	2,014,739	142,498	1,876,228	104,509
Trout, Spotted	213,103	74,587	172,005	50,346
Shad	1,068,293	214,040	701,851	168,080
Sharks	433	39	2,472	124
Sheepshead	8,825	705	6,775	493
Snapper, red			3,223	1,289
Spade Fish	1,575	127	177	7
Spanish Mackerel	79,812	11,309	116,041	12,193
Spot	1,070,159	102,954	1,032,314	71,811
Striped Bass	654,624	109,432	399,763	59,965
Sturgeon	53,188	10,638	69,216	10,874
Swellfish	383,769	11,507	404,548	9,963
Tuna	40,625	5,826	33,729	6,479
White Perch	290,245	30,086	343,289	20,273
Yellow Perch	28,923	2,520	20,202	1,977
Swordfish	530,104	295,667	221,657	100,951
TOTALS	190,933,755	4,754,144	176,779,931	4,348,289

SHELLFISH

	1964-65 Quantity	1964-65 Value to Fishermen	1965-66 Quantity	1965-66 Value to Fishermen
Shrimp (lbs., heads off)	2,280,161	1,048,874	2,850,518	1,710,311
Oysters (U.S. Standard Bu.)	179,641	538,923	165,319	495,957
Clams, Hard (Bu.)	35,370	127,332	28,543	102,755
Clams, Rangia (Bu.)	.....	.....	1,222	4,399
Scallops, Bay (Gal.)			48,832	195,328
	65,415*	264,235*		
Scallops, Calico (Gal.)			87,199	348,796
Scallops, Sea (lbs.)	.....	.....	91,630	56,811
Crabs, Soft (Doz.)	16,000	28,000	36,966	64,691
Crabs, Hard (Lbs.)	18,700,680	1,122,041	19,673,554	983,678
VALUE OF SHELLFISH		3,129,405		3,962,726
VALUE OF FINFISH		4,754,144		4,348,289
TOTAL VALUE OF WATER PRODUCTS		$7,883,549		$8,311,015

* Includes Bay and Calico Scallops

The production of food fish for this biennium was approximately 66.1 million pounds, grossing $5,291,453 to the fishermen. This was an increase of 9.8 million pounds, and $1,517,906 over the last biennium. Principal catches of food fish were alewives, catfish, bullheads, flounders, and shad.

Although menhaden production has continued to decrease, the value to the fishermen increased by $137,241. There has been a scarcity of menhaden in North Carolina waters for the past several years, as well as in other menhaden producing areas in the United States.

The value of shellfish to the fishermen was $7,092,131, an increase over the 1962-64 biennium of $1,421,631.

Hard crab production has continued to show an increase. In fact, the biennium ending June 30, 1956 showed 14,713,680 pounds as compared with 38,374,234 pounds in this biennium. Due to the improved methods of processing and marketing, hard crabs should continue to be one of the leading fisheries. Soft crab production has also continued to increase during the current biennium.

Due to excellent harvests of bay and calico scallops and new processing methods, production has been the highest in the history of this fishery. Ten years ago, 18,766 gallons of scallops were produced as compared with 201,446 gallons in this biennium. During the current period we also produced 91,630 pounds of sea scallops.

Although adverse weather conditions damaged the shrimp population in the early spring of each year during this biennium, production increased by 400,948 pounds and $37,385 over the preceding biennium.

During the past two years, a market has been established for the Rangia clam which is caught in fresh water. This species of clam seems to be available in almost unlimited quantities in the northeastern waters of the State and could mean additional income to the fishermen.

The catch of oysters during this biennium was 344,960 bushels as compared to 349,947 bushels during the preceding biennium. This small decline might be attributed to the closing of four oyster shucking houses on Harkers Island.

COMMUNITY PLANNING

The primary function of the Division of Community Planning is to provide towns, cities, and counties with the technical assistance needed for the solution of their physical development problems, through planning. Assistance is given with studies, plans, and ordinances designed to implement the plans. Studies of the land use pattern and density, of the population trends and characteristics, and of the area's economic strengths and weaknesses form a necessary backdrop to planning. Plans identify the most appropriate locations for future residential, commercial and industrial development, the best sites for needed parks, schools, and other community facilities, and a system of roads that will relieve present congestion and serve the traffic demands of the community as it grows. Ordinances set reasonable minimum standards for development to insure that roads will be wide enough to handle the traffic anticipated; that lots will be large enough for the utility system to be used, and that uses are established in appropriate locations throughout the community.

In the typical planning assistance program, a professionally trained city planner meets with a Planning Board whose members are appointed by the local governing body. Meetings are held at least once a month over a two-year period, and the growth problems and potentials of the community are carefully analyzed and discussed. Together, the local Planning Board and their technical advisor prepare plans and ordinances for the consideration of the governing body. Development problems that occur during the course of the planning program are often referred to the Planning Board for their recommendation.

THE NEED FOR COMMUNITY PLANNING

The need for sound community planning is evident in our growing traffic congestion, the deterioration of residential areas by improperly located commercial or industrial activities, the cancerous growth of slums and blighted conditions, the decline of central business districts, the increasing cost of municiple services, and the inadequate provision of land for parks and other public uses. The greater majority of North Carolina communities, like most American communities, have grown without the benefit of adequate plans to guide development. Fortunately, North Carolina is still a State of small communities and we can avoid the tragic and costly mistakes which have been made in the large metropolitan concentrations in other sections of the country.

Few States contain so many small incorporated places or have more population living in communities of under 50,000 persons. These communities are one of North Carolina's great assets and they are becoming increasingly attractive to people, business and industry now located in overcrowded metropolitan centers. At the time of the 1960 census, there were 554 urban places in North Carolina. Two hundred eighty of these communities, or approximately one-half, had populations in excess of 1,000 persons; 66 communities had population in excess of 5,000 persons, and only seven urban places had populations in excess of 50,000 persons.

While the typical North Carolina community is small, it is also experiencing a rapid rate of growth. Between 1950 and 1960, 90 percent of North Carolina's total population increase occurred in the 280 places having populations of more than 1,000 persons. The opportunity now exists to guide development so that more economic, efficient, and liveable communities will be the result of this growth.

DIVISION'S PRIMARY RESPONSIBILITY TO SMALL COMMUNITIES

The seven municipalities in North Carolina having populations of more than 50,000 persons, have created planning departments staffed with professional planning personnel to assist in the increasing problems of urban

growth. The smaller towns and cities do not have the financial resources to employ full time professional planning staffs although their planning needs are no less acute than those of their larger neighbors. Therefore, the Division maintains a trained staff which provides professional planning services to the smaller towns, cities and counties at a reasonable cost. Individual staff members of the Division may work with several communities, thus reducing the overall planning costs for the individual community far below that which would be incurred if they employed their own fulltime planning staffs.

FEDERAL GRANTS FOR PLANNING OF COUNTIES AND OF MUNICIPALITIES HAVING A POPULATION OF LESS THAN 50,000 PERSONS

Back in 1954, Congress recognized that while planning was very desirable in the Nation's smaller communities, these areas often lacked the financial resources to undertake such a program on their own. Section 701 of the Housing Act, passed that year, provided funds for matching grants to State agencies that would provide technical planning assistance to these communities. This is a three way program. The Federal grants pay 2/3 of the cost of the planning work that is done. The local governments pay the balance of the cost of the planning work. The authorized state planning agency, which in North Carolina is the Division of Community Planning, is responsible for the expenditure of the Federal and local funds and for the provision of planning services to participating local governments. Provision of office space, office furniture and equipment, communications, and other administrative overhead costs is the responsibility of the State.

AREA PLANNING OFFICES

In order to bring the planners on the Division staff into closer contact with the communities they are assisting, four Area Offices have been established across the State. While the other three Area Offices were set up prior to July 1964, the Coastal Area Office was established in Washington, N. C. during the Spring of 1966. The other Area Offices are Eastern (Raleigh), Central (Raleigh), and Piedmont (Salisbury). Each Area Office has a staff of qualified community planners and back-up personnel who work closely with the cities and counties in their area. Western North Carolina communities participate in this program through the staff of the Western North Carolina Regional Planning Commission, located in Asheville.

These Area Office staffs are available to provide continuing planning assistance to the smaller municipalities, not only to assist in the preparation of plans but also to provide technical assistance needed by municipal officals for the solution of day-to-day problems affecting the physical development of the community. The establishment of these area Planning Offices is the result of an increasing realization among municipal officials that planning should be a permanent function of local government. This is especially true in periods of rapid urban change and growth. The completion of a comprehensive plan provides the framework for decisions about the desirable development of the community, based upon the best available knowledge of population growth, economic potential, and land use trends within the community. But the plans have little value unless a continuing community planning program is maintained to insure that decisions affecting the physical development of the community are made within the framework of the plans and within the financial capacity of the community. Since many technical questions are involved, municipal officials need professional planning assistance available to them on a continuing basis. Such assistance is available to all towns, cities, and counties in the State.

The Division also encourages cities and counties to employ their own professional planning staff. When they do, the Division is able to assist them financially by providing them the Federal grant funds obtained for completing specific studies. The local government subcontracts this work from the Division and is reimbursed for staff and other costs as the specific studies are completed. As of June 30, 1966, five local, public planning staffs

in North Carolina were receiving financial assistance in this manner. These were staffs of the Martin County Planning Board, the Guilford County Planning Board, the Research Triangle Regional Planning Commission, the Western N. C. Regional Planning Commission, and the Goldsboro Planning Board.

When appropriate, the Division uses the services of private planning consulting firms and private mapping firms. As of June 30, 1966, the Division had 10 contracts with 8 such firms who were performing various specialized services under subcontract.

COMMUNITIES RECEIVING PLANNING ASSISTANCE

On July 1, 1964, the Division had 114 contracts with 96 municipalities and counties to provide them with technical planning assistance. On June 30, 1966, the Division had 92 contracts with 86 municipalities and counties, and 17 other contracts were awaiting Federal approval. Of the 86 communities being assisted on June 30, 1966, 43 of them were undertaking advanced planning programs that built upon studies and plans completed in earlier contracts with the Division.

The table below compares the number of communities being served in 1964 with those served in 1966, by city size. While a small decline in the number of communities being assisted is indicated, applications for Federal grant funds on behalf of 20 communities were submitted in early July, 1966.

Population of Urban Places	Total No. in N. Carolina	No. Being Assisted July 1, 1964		No. Being Assisted June 30, 1966		In Application Stage 6-30-66
		Localities	Contracts	Localities	Contracts	Contracts
Places up to 2,500	429	32	35	28	28	5
2,500— 5,000	59	21	26	11	12	1
5,000—10,000	30	16	21	13	13	3
10,000—20,000	18	14	18	11	14	5
20,000—30,000	6	2	2	2	2	—
30,000—40,000	3	2	2	2	2	—
40,000—50,000	2	1	1	1	1	—
TOTAL	547	88	105	68	72	14
Counties	100	8	9	18	20	3

The list below shows the communities that have received or are receiving professional assistance under the local planning assistance program, as of October, 1966. The project number following the name of the community refers to a Federal grant that is received by the Division for specific studies and plans. Project #2 ran from July, 1958 to July, 1959, and thus has been completed. All projects with numbers from 28 to 43 are current projects. All projects above 43 refer to applications for grant funds now pending Federal approval before work is initiated.

MUNICIPALITIES

Aberdeen 53
Ahoskie 23-49
Albemarle 21-28-39
Andrews 23-48
Apex 19-35-53
Aurora 41
Ayden 20-24
Banner Elk 35
Beaufort 14-48
Belhaven 37
Belmont 35
Benson 12-26
Boone 21
Brevard 16-24
Bryson City 44
Burlington 17-39
Burnsville 52
Canton 17-26
Carolina Beach 5-49
Carthage 28
Cary 7-11
Chadbourn 35
Chapel Hill 2-12-20-23-34-43
Cherryville 42
Clinton 3-7-24
Clyde 16
Columbus 34
Concord 24-42
Conover 3
Cornelius 49
Davidson 49
Dobson 12
Draper 27-49
Drexel 42
Dunn 19-27-42
East Spencer 45-53
Edenton 42
Elizabeth City 3-7-12-24-39
Elizabethtown 38
Elkin 12
Elon College 49
Enfield 34
Fairmont 28-44
Farmville 17-28
Fayetteville 13
Forest City 7
Franklin 8
Fuquay-Varina 23
Glen Alpine 45
Goldsboro 3-39

Graham 7-34
Granite Falls 20
Granite Quarry 53
Greenville 26
Halifax 38
Hamlet 42
Havelock 14-20
Hazelwood 14
Henderson 3-7
Hendersonville 17-34
Hertford 23-39
Hickory 3-28
Highlands 7
Hillsborough 39
Hot Springs 17
Huntersville 53
Jacksonville 3-24
Jamestown 19-39
Kings Mountain 26-42
Kinston 3-9-15
Lake Waccamaw 49
Landis 21-45
Laurinburg 2-7-26-45
Leaksville 27-49
Lexington 3
Liberty 28
Lincolnton 27
Littleton 12
Long Beach 28
Louisburg 19
Lumberton 21-28-34-44
Madison 11-39
Mars Hill 34-52
Maxton 8-12-19-37
Mebane 42
Mocksville 3-7
Monroe 20-35-39
Mooresville 3
Mount Airy 7-19-42
Mount Gilead 19
Mount Holly 7-17
Murfreesboro 17-28
Murphy 17-34
Nags Head 14
Nashville 24
New Bern 9-12-17-34
Newport 48
Newton 3
North Wilkesboro 8-23-37
Oxford 28
Parkton 2
Pilot Mountain 12
Plymouth 26
Raeford 3-7
Randleman 37
Red Springs 41
Reidsville 12-27-45
Roanoke Rapids 8-21-38
Robbins 37
Rockingham 7-12-19-22-34
Rocky Mount 8-23-42-49
Roseboro 17
Rutherfordton 39
Salisbury 3-7-53
Saluda 27
Sanford 16-28-45
Selma 8-17-28-42
Shelby 12-26-42
Siler City 49
Smithfield 19-20-42
Southern Pines 37-53
Spencer 3-7-20-53
Spray 27-49
Spruce Pine 24-52
Stantonsburg 24-49
Statesville 53
Star 14-26
Sylva 28
Tarboro 12-21
Taylorsville 27
Thomasville 3-24-45-53
Tryon 27
Valdese 45
Wadesboro 26
Wagram 28
Wallace 28
Washington 12-21-26-35-53
Waynesville 11-37
Wendell 19-34
White Lake 16
Whiteville 14-19-39
Wilkesboro 8
Williamston 45
Wilmington 7-21-39
Wilson 3-8-23-39
Yadkinville 53
Zebulon 11-19-37

COUNTIES

Beaufort 49
Camden 35*
Carteret 7-14-35
Chowan 35*
Currituck 28-35*
Dare 14-17-35*
Edgecombe 51
Gaston 46
Gates 35*
Halifax 12
Haywood 16
Henderson 24
Hertford 39
Hyde 35*
Jackson 34
Lee 45
Martin 39
McDowell 45
Nash 51
New Hanover 40
Northampton 12
Pamlico 49
Pasquotank 34-35*
Perquimans 35*
Person 19
Polk 27
Rowan 51
Rutherford 16
Surry 12
Tyrrell 35*
Union 34-53
Vance 42
Warren 12
Washington 35*
Wilkes 8-53
Yadkin 39

* Participated in Albemarle Area Counties Project

TOTAL
Projects 39
Municipalities 148
Counties 36
Localities 184
Contracts 316

FORESTRY

The North Carolina Forest Service is the familiar name of the Forestry Division which operates under general statutes in effect for a number of years. These statutes assign broad responsibilities and authority to the Division on eighteen million acres of forest land in private and State ownerships. A broad law outlines the basis for the more specific laws as per the following quotation "have charge of forest maintenance, forest fire prevention, reforestation and protection of land and water supplies by the preservation of forests." Specific authorizations include "to arrange for and accept such aid and cooperation from the several U. S. Government Bureaus and other sources as may assist in carrying out the objectives of the Department". Some subjects of general interest are given next and are followed by detailed accounts of the different branches of the Forestry Division.

Forest Fire Control. The 1965 Spring fire season was more serious than that of 1964, but not as severe as the 1963 Spring fire season. The serious drought of the Fall of 1965 continued into the latter part of April 1966. This drought, together with unfavorable atmospheric conditions, resulted in a severe Spring fire season in 1966. Forest fire losses in 1966, under abnormal conditions similar to those of 1963, were reduced by forty-six per cent with about a three per cent reduction in number of fires.

Forest Survey. The Forest Survey of the State, by the U. S. Forest Service, was completed and preliminary forest resource statistics published. These statistics continue to emphasize the importance of forest resources to the economy of the State. The wood-using industry produces well over a billion dollars annually in terms of finished products. The perpetuation of these benefits from the State's forests depends upon maintaining a favorable balance of timber growth over the drain from harvesting raw materials and losses due to timber mortality.

For the first time in several years, a safe margin in this favorable balance has been lost due to expansion of our wood-using industries. Improvement in this situation is imperative if we are to hold and expand our forest industries and continue to enjoy the resulting economic benefits. Complicating the problem is the fact that increases in timber growth must come from that seventy-eight per cent of our forest land which is owned by over two hundred forty-five thousand small landowners. These forest lands are capable of sustaining a higher growth rate than they are at present. This division is the only agency capable of causing material improvement in small ownership forestry. The future supply of forest raw materials depends on the effectiveness of the Division's programs.

Forest Fire Control Training. In the summers of 1964 and 1965, training sessions were held at the Kinston facility for Forestry students from Clemson, N. C. State University, Duke, V. P. I. and Wayne County Technical Institute. These sessions were very popular with the students and professors. The objective is to fill the gap in the instruction in the Forestry schools where scientific forest fire control, due to lack of time and equipment, is difficult to teach. Approximately one hundred fifty students and professors attended the 1964 session and about one hundred attended the 1965 session. All were enthusiastic over the results of the two and one-half day training sessions.

Forestry Committee—Conservation & Development. The Forestry Committee, of the Conservation & Development Board, inspected twenty-one Forestry Division installations including every major field headquarters in the State and some lookout towers during their first year in office. The Committee members met and talked with most of the supervisory personnel and staff members of the Division's many field establishments.

The Committee is aware of the dangerously low margin of forest growth

over timber drain, which has developed as a result of expansion of the wood-using industries in the State. In the commercially desirable species, this margin will be depleted by the requirements of already planned new industries and plant expansions. Of particular concern is the shortage of high-quality hardwood timber, the essential raw material of the furniture manufacturing industries. Increased shortages of this vital material will cause the furniture industry to rely more on imported hardwood lumber.

The Committee recognizes two solutions to this problem, and both must be reflected in the budget of the Forestry Division. First, the forest protection programs should be intensified to reduce to a minimum the heavy timber losses which are now being caused by forest fires and by insect and disease damage. This reduction of timber mortality would have an immediate favorable influence on the timber growth versus drain ratio. Of more importance is the need to greatly intensify long-range programs aimed at increasing the productivity, and consequently, the annual yield of the forests in the future. The Committee feels strongly that this implementation of present programs must be started now. The opportunity to take corrective action will be lost if implementation is deferred in favor of crash programs at some time in the future.

FOREST FIRE CONTROL

Material progress has been made over the past ten years in reducing forest fire losses in the State. The progress includes the swampy ground burning area of approximately two million acres in the Coastal Plain. Under dry conditions forest fires in this type are extremely difficult to extinguish due to ground cover, inaccessibility and actual burning of peaty soil.

This difficult fire problem is made more difficult by numerous and extensive land clearing operations in the area involving the burning of long rows of bulldozed material which often burns several months and then, when critical weather conditions occur, escapes to the woods.

The 1965 Spring forest fire season was about normal except for a period of one and one-half months in late April and May when woods conditions were abnormally dry and two fires in the Sandhills section burned about 2,000 acres each. The Fall fire season of 1965 was extreme in December under drouth conditions. Occurrence of fires was about three times greater than normal but acreage losses were held to a minimum.

An accumulated rainfall deficiency of about six and one-half inches together with natural Spring "drying out" conditions started the critical forest fire season of 1966 in early March. A continued acceleration of serious fire conditions reached the high danger stage in late March when two fires burned 2,000 acres and 3,500 acres in Onslow and Pamlico Counties respectively.

The Southern Forest Fire Laboratory at Macon, Georgia, called a warning of approaching critical fire weather conditions on March 30. The impending danger was immediately sent to all field offices and radio and television stations. The State Forester cancelled all burning permits and prohibited all use of fire in or near the woods. Even so, serious fires continued to occur and were increasingly difficult to suppress.

April 1 was the most critical fire day with high winds, extremely dry woods and unfavorable atmospheric conditions. Four major forest fires occurred on April 1 in the Sandhills and Southeastern sections burning 2,945 acres near Pinebluff, 16,900 acres in the vicinity of Ammon in Bladen County, 6,500 acres near Black Lake in Bladen County, and 4,500 acres in Northwest Pender County continuing adverse conditions delayed control of these fires.

The National Guard was called to control numerous smaller fires in Scotland County on the night of April 1 and to assist in the control of a 2,000 acre fire burning in from South Carolina on April 3. A major fire in the Green Swamp section of Columbus County, on April 6, required irrigation equipment and special high flotation tractors to control it on the night of April 7 at 5,000 acres.

A forest fire starting from an aircraft bomb on the Dare Bomb Range on April 11, under adverse and freakish weather conditions, trapped Forest

Rangers and landowner personnel. These men were rescued by military helicopter. Substantial military, landowner and U. S. Forest Service assistance was required in controlling this fire on April 14.

The forty-six per cent reduction in forest fire losses in the Spring of 1966 compared to the Spring of 1963 when similar conditions existed, is evidence of the progress achieved by the Division's Fire Control Programs.

A cooperative project was initiated with the U. S. Forest Service and the Air Force in 1965 to provide supplemental forest fire protection on the Air Force and Navy bombing ranges in Dare County. The additional protection was needed to cope with the increased forest fire hazards and risks directly associated with the establishment and operation of these aircraft bombing ranges. Additional personnel, specialized forest fire equipment and supplies, contract water dropping aircraft and helicopter, and road and canal maintenance equipment were all furnished by the Air Force under this project which is operated by the Forestry Division on the Bomb Range area.

The Forestry Division continued the operation of three water dropping planes. These were of great value in the suppression of high intensity fires and smaller ones in isolated locations. A contract 1,000 gallon water dropping plane was employed in the Spring of 1966 primarily for use on the Dare Bomb Range but was also used on high intensity fires in other locations. Quick attack on high intensity fires by these planes is essential in the early control of such fires.

The U. S. Forest Service continued financial cooperation with the State under the provisions of the Clark-McNary law. The amount of available Federal funds under this cooperation depends primarily on the State appropriation for Forest Fire Control and the State maintaining its relative position with other States in expenditures for Forest Fire Control.

Present Organization

The State is organized into four Forestry Regions, these being the Lower Coastal, Upper Coastal, Piedmont, and Mountains. Each has a Regional Forester in charge who supervises four Forest Districts in the Lower and Upper Coastal Plain Regions, two in the Piedmont Region, and three in the Mountain Region. Each of the 13 District Forest offices is in charge of a District Forester who supervises the work in an area of about 1 to 2 million acres of timberland involving from 4 to 10 counties. The District Foresters have 1-4 supervisory assistants. There were 94 counties cooperating with the Forestry Division as of June 30, 1966.

State Plans

The forest fire plan for the State for large fires, involving cooperation with the Highway and Prison Departments, other State Departments, Marine Corps at Camp LeJeune, industrial and other landowners, and town and rural fire departments was used on the three major forest fires in 1966 and many other smaller ones with excellent cooperation and results from all concerned.

Training Schools in large fire organization and suppression have been held each year for the Lower Coastal Region in cooperation with Forest Industry, industrial and other landowners, and the Marine Corps. A cooperative fire suppression agreement with the Marine Corps is a part of the above-mentioned fire plan for the State. Similar training schools in large fire operations and multiple fire situations have been held in the Upper Coastal Plain in cooperation with the Wildlife Commission, industrial and other landowners and rural fire departments.

The Rural Fire Defense Plan involving cooperation with State Civil Defense and the U. S. Forest Service has been revised and provides for the coordinated use of equipment and manpower resources of Federal land protection agencies and the State Forestry Division in case of natural disasters or enemy attack. The State Forester is the Chairman of this Rural Fire Defense Committee. The Committe operates under the overall direction of the State Civil Defense Director in cases of natural disasters or enemy attacks.

County Cooperation

The Division of Forestry works in financial cooperation with 94 counties, such work being based on the County as a unit. This form of cooperation has met widespread support from the various Counties. The Department cooperates with the counties on the basis of their ability to pay as indicated by each County's taxable wealth. The counties pay from 25% to 40% of the total cost of forest protection in the county.

As of June 30, 1966, there were six counties containing about 853,200 forest acres still without any organized form of forest fire protection.

Private Cooperation

Financial cooperation was continued with private forest owners who agree to pay an annual amount, which is used to supplement other available funds, to provide more intensified fire protection for their land.

Detection System

The Forestry Division now operates 146 fire lookout towers and Federal land ownership agencies operate an additional 42 such towers in cooperation with the Forestry Division for reporting forest fires. The Division also operates 8 state-owned reconnaissance airplanes which supplement the tower network in periods of unfavorable visibility. These planes act as the eyes for fire fighting crews on difficult fires. Another valuable service is the parachuting of food, drinking water, coffee and small items of supplies to the crews.

Forestry Division Communications

Currently the Division of Forestry operates 180 fixed stations, 571 mobile and 89 portable two-way communications radios along with a few miles of telephone line. Most of the fixed station radios are in lookout towers and District Offices and the mobile radios are on pick-up trucks, jeeps, larger trucks, station wagons, and other fire suppression vehicles.

Permanent Improvements

One new 120 Ft. steel lookout tower was purchased and erected in Wayne County near Fremont and a 100 Ft. steel lookout tower at Greenville together with the residence and equipment shelter building were moved to a new site.

A small tower residence was completed under contract at the Giddenville tower in Sampson County.

New District warehouse and shop buildings were completed at Rockingham, Elizabeth City, Whiteville, and Sylva providing much needed workshop and storage space. A major addition to the District workshop and storage building at Fairfield was also completed providing a full-sized building and adequate shop and storage facilities.

A new office building was completed at Rockingham and another is near completion at Asheville.

A combination equipment shelter workshop and storage building was built at Clayton.

Dual purpose County headquarters and workship buildings were completed near Henderson in Vance County, Nashville in Nash County, Marion in McDowell, and Yanceyville in Caswell County.

Combined County headquarters, workshop and equipment shelter buildings were completed at Catherine Lake in Onslow County, Williamston in Martin County, and Windsor in Bertie County.

Numerous tower sites, at which leases were expiring, were purchased where arrangements could be completed for deeds in fee simple. In a few cases, it was necessary to accept renewal leases where the landowners would not sell.

The purchase of new District headquarters and tower sites at Fayetteville was started and will be completed during the Fall of 1966. These sites are necessary for the moving of the Fayetteville District headquarters and tower to a new location to permit completion of an Auditorium Complex at Fayetteville.

Forest Fire Statistics

The forest fire statistics for the past four years are shown in the statistical chart. In evaluating these statistics, the following factors must be kept in mind:

1. Climatic conditions are all important in the actual suppression of forest fires.
2. Funds expended represent less than one-half the amount neeeded for adequate protection.

Conclusion

The statistics show that the 1965 fire season was more severe than in 1964 but not as critical as in 1963. Forest fire losses during the Spring of 1966, under conditions comparable to those of the Spring of 1963, were reduced by 46% compared to the 1963 losses. Cooperation from all State and Federal agencies and the general public is indicative of the progress made in forest fire control.

FOREST FIRE STATISTICS FOR STATE PROTECTED AREAS BY CALENDAR YEARS

	1962	1963	1964	1965
Area under Protection—Acres	17,279,400	17,279,400	17,279,400	17,507,100
Number of Fires	3,237	4,826	3,366	4,691
Causes of Fires				
1. Lightning	88	55	50	31
2. Campfire	82	128	70	86
3. Smoking	796	1,190	817	1,263
4. Debris Burning	1,067	1,641	1,200	1,484
5. Incendiary	600	963	572	769
6. Machine Use	185	263	253	333
7. Miscellaneous	419	586	399	725
Total	3,237	4,826	3,366	4,691
Area Burned:				
Forest Land	48,518	204,638	33,571	47,678
Open Land	3,996	73,308	3,972	18,327
Total	52,532	277,946	37,543	66,005
Damage:				
Forest Land	$1,318,000	6,418,200	640,200	1,668,730
Other	56,000	697,600	48,962	69,031
Total	$1,374,000	7,115,800	689,162	1,737,761
Law Enforcement Number of Fires Resulting in Law Enforcement Action	210	373	163	135
FINANCES—FISCAL YEAR	1962-63	1963-64	1964-65	1965-66
Appropriations by Counties	400,987	439,490	456,655	506,902
Appropriations by Private Owners	26,871	30,722	33,202	35,823
Appropriation by State	1,288,285	1,421,934	1,437,212	1,839,733
Rentals from Employees	9,043	8,741	9,633	9,258
Appropriation by Federal Government	420,400	450,400	461,900	485,604
Presuppression Fire Lines	2,478	5,289	4,176	3,290
Bladen Lakes State Forest	8,844	8,844		
Miscellaneous	718	1,230	940	553
Total	2,157,626	2,366,650	2,403,718	2,881,163
Available Funds:				
Per Acre Protected	12.48¢	13.69¢	13.91¢	16.45¢

FOREST MANAGEMENT

The forests of North Carolina are the state's "Greatest Natural Resource". These forests continually provide many of the ingredients required for the state's economic growth and development.

This renewable natural resource, occupying 65% of the total land area of the state, provides the raw material for the wood-using industries; wages and profits for that segment of the population who grow, harvest, transport, process and manufacture forest products; and the multiple benefits of watershed protection, fishing, hunting, and recreation for everyone. Trees are the basic component of the magnificent scenery which helps attract the many tourists to the State.

Every county in the state contains one of more wood-using industries. The total investments being exceeded only by the textile industry. Wood or wood fibre is a basic raw material for 45% of the manufacturing establishments in the state. Twenty percent of the total labor force find employment in the forest industries. The value of the products they manufacture exceeds well over one billion dollars annually.

North Carolina ranks first in the nation in the manufacture of wood furniture and in the production of hardwood plywood and veneer. It leads the South and East in the production of lumber and is also a leading producer of pulpwood, plup and paper.

North Carolina's total annual forest growth presently exceeds annual drain. However, the requirements of confirmed or planned new plant construction and established industry expansion nearly equals the surplus growth of the desirable species. Future expansion of the wood-using industries will be limited until additional supplies become available by improving present stocking and increasing the growth rate of the state's forests. Closer utilization of the present lumber supply during logging and manufacturing and the development of profitable markets for the large volue of presently low value trees are necessary to further the expansion of the wood-using industry.

The North Carolina Division of Forestry "Tree Improvement Program" is designed to assist forest landowners in growing trees of superior quality suited to the needs of any and all segments of the forest industry. Enough forest land is available in the state to produce products in excess of the anticipated demands of industrial growth and population expansion.

Nearly 16 million acres (over 78% of the commercial forest land) is in tracts owned by farmers, merchants, doctors, lawyers, housewives, and others—247,000 people who are not primarily concerned with growing timber. These privately owned non-industrial forest lands are capable of a much higher sustained growth rate. The actions taken by these private owners will largely determine the future supply of wood which will in turn influence the expansion and development of the wood-using industries in the state. Their present low growth rate is the result of mismanagement of their forest lands due, in part, to lack of professional forestry knowledge.

It is to the owners of these potentially highly productive but presently understocked and unmanaged farm forests that the Division of Forestry offers professional forestry services. The outstanding feature of this activity is that the private landowner is given in-the-woods advice and assistance on how best to manage and market his timber.

When advice or assistance is requested, the forester makes a thorough reconnaissance to evaluate the present condition of the forest area and to determine the capability of the soil to produce specific forest products. The forester informs the landowner of these conditions and recommends a plan of action that will maintain or increase the forest growth, and at the same time meet the needs of the landowner.

Additional services include: selecting, marking, and estimating the volume of trees ready for harvest; assistance in finding markets for and selling forest products; elimination of cull trees and restocking with desirable species; assistance in preparing open fields, cut-over or otherwise understocked areas for natural regeneration or reforestation by planting; advice or assistance in obtaining and planting forest tree seedlings.

The professional forestry services of the Division are available to landowners in every county of the state. Seventeen Service Foresters and sixteen County Foresters devote all or most of their efforts to giving forest management advice and assistance to private forest landowners. Other foresters in the Division of Forestry provide as much forest management advice and assistance as their other activities permit. The Division has inaugurated an intensive training program in Forest Management for the non-professional personnel. These employees, particularly the County Forest Rangers, will be qualified to assist the woodland owners in the mechanics of carrying out the Forest Management recommendations of the professional foresters.

A nominal charge is made for the marking service. Landowners are charged at the rate of 50¢ per thousand board feet of sawtimber mared; 15¢ per cord of pulpwood marked, and 15¢ per seed tree selected. No charged is made for the first 20,000 board feet or ten cords marked.

SUMMARY OF FOREST ASSISTANCE

	Period 1948-1964	During Biennium 1964-1966	Total To Date
No. of Examinations Made*	31,978	20,166	52,144
Total Woodland Acres Examined	2,848,720	341,733	3,190,453
No. of Tracts Marked	8,565	8,672	17,237
Acreage Marked	168,361	34,951	203,312
Board Feet Marked	381,365,000	93,381,000	474,746,000
Cords Marked	196,250	95,574	291,824
Acres Given Planting Assistance	203,498	8,320	211,818
Applications Not Acted Upon (July 1, 1966)		625	

* This total includes examinations required in providing technical forestry assistance to the Agricultural Conservation Program (ACP), Farmers Home Administration (FHA), Soil Conservation Service (SCS) and the Cropland Adjustment Program. An additional 3259 requests of a miscellaneous nature and for information or advice in fields closely allied with forestry were also serviced.

While the requests for services increased, only a small percentage of North Carolina's forest landowners request assistance each year. The 20,000 forest examinations made during the biennium represent only 8% of the 248,000 forest landowners. Foresters and Rangers of the Division marked approximately 6% of the sawtimber harvested and 5% of the pulpwood cut during the same period. This represents an increase of 110% in the volume of sawtimber marked and a 127% increase in the number of cords marked over the previous biennium. A large percent of this was the result of the Division's efforts to control the southern pine beetle by marking infested trees and designating infested stands for salvage or sanitation cuts.

Over 87 million board feet and 100,600 cords of marked sawtimber and pulpwood were harvested during the biennium. The gross return to the landowners from the sale of these marked trees exceeded $2,926,000.00.

The Division is cooperating with all agencies to plan programs which promote the economic development of the Appalachian region as authorized by the Appalachian Regional Development Act of 1965. Two additional foresters were hired with matching funds provided under this Act to increase landowner assistance in the Appalachian counties.

The development and expansion of markets for all types of timber is an essential part of the Division's efforts. Current emphasis is in the area of production and marketing of a high quality, well-formed "North Carolina-Grown Christmas Tree." Principal species suitable for shearing and shaping to produce a dense, conical-shaped tree are the Fraser fir, white pine, and Scotch pine. These species are produced in the Division's forest tree nurseries.

The Division has printed a brochure to help stimulate Christmas tree planting and a "Christmas Tree Growers' Guide" to assist the small plantation owner in marketing his product.

A total of 265 requests for forestry assistance involving 42,702 acres were referred to private consulting or industrial foresters. Ninety-four of these were timber marking projects referred to private foresters after an examination of the tract determined that marking was advisable. The recom-

mendations of the Division's foresters were followed by the private foresters in marking 12,230 cords of pulpwood and 3,300,000 board feet of sawtimber on 3,469 acres. One hundred seventy requests for types of assistance not permitted by Division policy were referred directly to the private foresters.

Forest improvement loans are available to qualified farm forest owners through the Farmer's Home administration. FHA loan specifications require a forest management plan for the entire forest area of the farm. Division foresters obtain the necessary data on volumes, operating costs, growth and yield, and prepare the forest management plan for the smaller landowners. Applications for loans from larger farm forest owners are referred to consulting foresters for preparation of the required forest management plan.

The Agricultural Stabilization and Conservation Service authorizes cost-sharing with farmers for approved conservation practices. A forester is a member of the Agricultural Conservation Program (ACP) Development Group of each county and assists the County Committee in developing county conservation practices. The forester and the County Rangers advise and assist the landowners in carrying out the forest conservation practices. The Division is reimbursed by the County ACP for providing authorized technical forestry assistance to farmer cooperators in the county.

The Division of Forestry is cooperating with the Tennessee Valley Authority in providing technical guidance in the management of the 20,000 acre Asheville municipal watershed for the production of water and timber. A twenty-year watershed forest management plan was developed and accepted by the city authorities. The harvest of the selectively marked timber from two of the ten compartments has been completed. The sale of the third compartment is being negotiated.

SMALL WATERSHED PROGRAM

The end of the biennium marked the eighth year of participation by the Division of Forestry in the Small Watershed Program. Activities are carried out through cooperative agreements with the U. S. Forest Service, Soil Conservation Service, and local Soil and Water Conservation Districts.

The Forestry Division's major objective is to improve the hydrological condition of the forest land on PL-566 watershed projects. This is done through the planting of trees on abandoned eroded land and on cutover lands; and by maintaining a desirable type of forest cover through proper forest management practices on the forested area of small watershed projects.

These forestry practices help our forest land to store and provide an abundant supply of clean water for local communities, and at the same time provide timber crops for our many wood-using industries. Other benefits achieved are the reduction of floodwater and sediment damages and the maintenance of desirable conditions of streamflow.

The Small Watershed Program has supplemented our fire control and forest management program by providing extra federal funds to expand our work under both programs.

Federal and state forestry watershed funds were used to provide accelerated forestry technical assistance on seven projects:

Lenoir and Lexington Districts	Whiteville District
Town Fork Creek—Forsythe and Stokes Counties	Back Swamp—Robeson County
Stewart's Creek—Surry County	Caw Caw Swamp—Brunswick County
	Dunn Swamp—Columbus County
	Juniper Swamp—Robeson County
	Lyon-White Oak Swamp—Bladen County

Service Forester personnel financed with cooperative forest management funds and headquartered at the New Bern, Rocky Mount, Fayetteville and Elizabeth City district offices provided forestry assistance to landowners on 11 projects:

PL-566 Project	County
Ahoskie Creek	Northampton, Bertie, Hertford
Bear Creek	Lenoir, Green, Wayne
Broad Creek	Beaufort
Caw Caw Swamp	Brunswick
Conetoe Creek	Edgecombe, Pitt, Martin
Cutawhiskie Creek	Northampton, Hertford
Grindle Creek	Pitt, Martin
Moccasin Creek	Johnston
Mosley Creek-Tracey Swamp	Craven, Jones, Lenoir
Pollock Swamp	Chowan
Swanquarter	Hyde

Forestry accomplishments carried out by two watershed project foresters and five Service Foresters on the above watershed projects are shown below:

FORESTRY ACCOMPLISHMENTS ON PL-566 WATERSHED PROJECTS

	During Biennium 1964-1966	Total To Date
No. of S.C.D. Woodland Conservation Plans Prepared	124	465
No. of Woodland Management Plans Prepared	30	397
No. of Acres For Which Forestry Recommendations Given	12,986	53,570
No. of Acres of Woodland Marked for Cutting	874	2,750
No. of Acres of Forest Land Hydrologically Improved	1,649	8,609
No. of Acres of Critically Eroded Land Planted in Trees	181	785
No. of Acres of All other Land Planted in Trees	536	2,702

Work plans were approved for operation for eleven new projects by either Congress or the State Soil Conservationist. With the exception of the Flea Hill project in Cumberland County and the Jacob Swamp project in Robeson County, all of these projects were serviced during this biennium.

The Division's Foresters assisted U. S. Forest Service watershed planners in making 14 field examinations on proposed watershed projects. Surveys were made on six watershed projects to determine the effects of proposed channel work on wetland hardwoods and to help avoid or minimize undersirable effects on the hardwood resources.

The hydrologic condition of forest soils on four projects along with five field reviews for the approval of work plans completed the Division's activities in the Small Watershed Program.

BIENNIAL REPORT

BLADEN LAKES STATE FOREST

Fiscal Years 1964-65, 1965-66

Since assuming operational control of the Bladen Lakes State Forest in 1939 the North Carolina Forestry Division has successfully shown that an overcut, mismanaged, badly burned forest located within an area containing some of the most non-productive land in North Carolina can be converted into a thriving, forestry enterprise.

Initially every effort was made to build up the growing stock and to prove that such an area could be made to pay its own way through the employment of sound forest management techniques.

As it became apparent that the initial objectives could be reached the Division of Forestry evolved plans to expand the value of the State Forest to the citizens of North Carolina as a complete demonstration of forestry practices.

During the past two years the value of the State Forest has been expanded through site preparation and plantings, Timber Stand Improvement, and other cultural activities, road construction and maintenance, building improvements, extensive protection measures, etc.

All State Forest projects are supported from the sale of forest products. At no time since 1939 have tax funds been used in the development, operation, expansion, or supervision of any State Forest activity.

During the biennium a partial list of expansion and protection projects instituted or completed include: 1,207 acres disced for planting, 939 acres longleaf, 270 acres loblolly, and 488 acres slash pine planted, natural regeneration obtained on approximately 85 acres using seed tree method, 234 acres of pine plantations released from competing low grade hardwoods using mist blowers, tree injectors, or brush cutters, approximately 3 miles of new truck trails constructed with all 100 miles of existing trails improved and maintained, and all buildings painted or improved, extensive fire prevention and protection measures employed plus many additional activities.

Within the past two years the first remeasurement of all 437 Continuous Forest Inventory permanent plots was completed. All data has been totalized with IBM computers and a long range plan of management control has been prepared. We now have excellent and useable data on volumes and growth. From such data was computed the annual allowable cut for this next five-year period with projects extending far into the future.

A major project has been the establishment and development of a 20-acre longleaf pine seed orchard. The orchard was installed within the boundaries of an existing pine plantation, necessitating extensive and expensive cultural and fertilization activities.

Each year Forestry students from N. C. State University, University of West Virginia, and Duke University tour the State Forest. Last year the State Forest hosted the annual Society of American Foresters Summer Meeting and was visited by some over 100 professional foresters from North Carolina, South Carolina, and Virginia.

A control burning short course for state, federal, and private foresters was presented on the State Forest during the winter of 1965-66. Each year some over 700 Boy Scouts descend on the State Forest for a three-day Camporee. Many smaller groups and individuals such as local classes, federal foresters, private and state service foresters, sawmill operators, post producers, interested landowners, etc., are conducted on activity tours of the State Forest.

Over $16,500 has been paid from State Forest receipts to the County of Bladen in taxes during the past two years. Over $6,000 has been turned over to the Forestry Division's county organization to provide better county-wide fire protection.

Below is outlined a detailed summary of all Bladen Lakes State Forest receipts for the biennium. A second summarization is outlined to indicate the yearly gross receipts since the inception of the State Forest in 1939.

RECEIPTS

BLADEN LAKES STATE FOREST

Fiscal Years 1964-65, 1965-66

3,410,678	Board Feet Rough Green Lumber	$216,591.41
239,118	Board Feet Logs	6,078.21
10,295	Cords Pine & Hardwood Pulpwood	123,629.90
7,396	Tons Debarked Pine Slabs	34,056.26
29,028	Treated Pine Posts	18,178.37
2,551	Pounds Charcoal	118.30
	Pine Straw	5,081.33
	Custom Treating	1,595.47
	Miscellaneous	283.82
		$405,613.07

YEARLY GROSS RECEIPTS SINCE THE YEAR 1939

Year	Amount
1939-40	$ 169.24
1940-41	1,092.57
1941-42	16,761.72
1943-44	31,794.00
1944-45	41,848.13
1945-46	26,793.95
1946-47	32,038.56
1947-48	31,045.46
1948-49	52,597.53
1949-50	61,189.83
1950-51	93,013.21
1951-52	95,008.23
1952-53	85,735.81
1953-54	85,592.77
1954-55	95,388.02
1955-56	103,415.33
1956-57	106,850.65
1957-58	123,529.40
1958-59	173,024.78
1959-60	194,266.72
1960-61	183,290.28
1961-62	199,428.29
1962-63	202,260.94
1963-64	203,972.00
1964-65	199,255.48
1965-66	206,357.59
	$2,654,506.86

NURSERIES

Four forest tree nurseries are now operated by the Division of Forestry. These installations are located in Johnston, Wayne, Burke, and Henderson Counties. They have a combined capacity of 100 million seedlings annually.

During the biennium over 74 million seedlings were produced. The pines, Loblolly, White, Slash and Longleaf, accounted for the majority of the production. In excess of 64 million seedlings of these species were grown and sold.

Hardwood seedlings such as red gum, sycamore, yellow poplar, and green ash are being requested from many cooperators and the nurseries will in the future have more of these seedlings available.

The Division's nurseries are on a self-supporting basis with tree seedlings sold at the approximate cost of production. The prices range from $5.25 per thousand F.O.B. Nursery for Southern Pines to $65.00 per thousand F.O.B. Nursery for Fraser Fir.

The following tabulation shows the distribution of trees by species and cooperators.

DISTRIBUTION OF FOREST TREE SEEDLINGS BY SPECIES

SPECIES	1962-63	1963-64	1964-65	1965-66
Arizona Cypress	97,950	156,975	41,575	34,150
Atlantic White Cedar	1,700	5,900	5,500	-0-
Cypress	-0-	-0-	13,510	15,650
Fraser Fir	570,800	434,495	155,380	314,370
Loblolly Pine	21,188,760	23,863,510	19,109,470	20,011,875
Longleaf Pine	1,230,675	1,029,530	1,343,275	1,946,575
Norway Spruce	-0-	11,674	33,956	3,000
Pond Pine	8,000	54,650	-0-	-0-
Red Cedar	363,910	413,675	434,932	285,800
Shortleaf Pine	196,500	165,700	220,850	282,250
Scotch Pine	188,150	321,135	13,600	-0-
Slash Pine	9,006,360	7,230,450	5,322,900	4,936,950
Virginia Pine	129,000	336,500	163,515	188,405
White Pine	6,688,755	5,655,661	4,548,175	7,271,276
Yellow Poplar	828,150	212,500	359,950	384,850
Red Gum	28,100	25,200	-0-	-0-
Maritime Pine	-0-	26,275	15,275	13,525
Miscellaneous	130,616	8,934	21,182	90,270
Multiflora Rose	-0-	620,100	1,512,000	-0-
Beach Grass	-0-	769,500	2,212,325	2,881,100
Totals	40,657,426	41,342,364	35,527,370	38,660,496

DISTRIBUTION OF FOREST TREE SEEDLINGS BY CLASS OF COOPERATIONS

CLASS OF COOPERATORS	BIENNIUM (1964-1966) NUMBER OF COOPERATORS	BIENNIUM (1964-1966) NUMBER OF TREES	CUMULATIVE TOTALS NUMBER OF COOPERATORS	CUMULATIVE TOTALS NUMBER OF TREES
Farmers	8,607	35,966,786	80,023	433,704,157
Industries	113	23,401,000	1,033	233,609,649
Schools	95	202,370	1,015	3,939,329
State	18	2,467,000	285	12,765,786
Clubs and Organizations	111	450,000	3,191	2,940,839
Municipalities	19	311,500	199	12,435,174
Federal Agencies	12	3,914,000	169	25,521,117
Others	271	869,785	2,087	13,738,246
Totals	9,246	67,582,441	88,002	738,654,297

TREE IMPROVEMENT

Progress has been made in establishing seed orchards at Ralph Edwards Nursery, Little River Nursery, and Bladen Lakes State Forest.

The seed orchard at the Ralph Edwards Nursery has been completed for White and Virginia Pine. The Shortleaf Pine orchard, at the same nursery, is nearing completion.

At the Little River Nursery, a seed orchard for Loblolly Pine has been established. Due to the wide geographical distribution of this species, the seed orchard has been divided into three areas: south coastal, north coastal, and piedmont loblolly. The seedlings grown from seed obtained at this orchard will be planted in their native geographic areas.

The Longleaf Pine orchard, located at Bladen Lakes State Forest, is well along and close to completion.

Future plans call for the development of tree orchards for superior hardwood species—such as Yellow Poplar and Red Gum. Further expansion of the seed orchards to accommodate Pond and Pitch Pine is now being undertaken.

The initial step in establishing a seed orchard is the location of superior trees of the desired species.

Superior trees have those characteristics which will result in a highly marketable tree in the shortest period of time.

Cuttings or scions are taken from superior trees during early spring. These scions are grafted on root stock. If the graft is successful, the grafted trees are planted in a seed orchard the following spring or fall.

In the spring of 1966, 59.1 acres of land were purchased for additional seed orchard development at Little River Nursery.

Fraser fir is one of the best species for Christmas trees, and efforts are being made to grow seedlings from a known seed sources for planting in the higher elevations of the state.

In the fall of 1965, 640 bushels of Fir cones were collected from the seed production area on Roan Mountain. In addition, some 336 bushels were collected from the surrounding area.

As of June 30, 1966, 87 acres of seed orchard has been established at the nurseries and Bladen Lakes State Forest. At present, the best estimate of future needs is that approximately 200 to 250 acres of seed orchards will be required.

INDUSTRIAL FORESTRY

Major emphasis was placed on surveys for the marketing and drain of primary forest products during the biennium.

The third revision of "Buyers of Forest Products in North Carolina" was printed and distributed. Since the initial version of this popular buyers guide appeared in 1955, over 12,000 copies have been distributed.

"Buyers of Forest Products in North Carolina" lists by county each buyer and the types of primary forest products purchased. Primary forest products are sawtimber, pulpwood, veneer logs, posts and pilings.

The second "Forest Products Commodity Drain Survey" was completed and the data tabulated and printed for distribution. This survey shows the volume of timber harvested in each county. Further information as to species and type of primary product purchased is given.

This "Drain Survey" data is combined with the recently completed inventory of North Carolina timber, carried out by the United States Forest Service, to accurately determine the total volume of timber harvested annually. Survey figures show a total of over 1.45 billion board feet and over 2.2 million cords harvested annually from North Carolina woodlands.

The volume of forest products harvested in the state has shown a steady increase for the period of the biennium. The principle increases have been for pine and hardwood pulpwood and for pine veneer logs. These veneer logs are required by the newly established and rapidly expanding southern pine plywood industry.

Despite a steady reduction in the number of small sawmills, lumber production has remained stable. This stability is due to the increased production and efficiency of the larger sawmills.

Preliminary data from the inventory of North Carolina timber combined with the "Drain Survey" indicates only a narrow balance of growth over drain of pine timber resources. This narrow balance can result in the curtailing of production and expansion in the pine-using industries of North Carolina.

The lumber industry of North Carolina has turned to the Division of Forestry for assistance in determing the relationship between sawlog volumes and their weight. This relationship, once established, will allow the lumber industry to affect further efficiencies in their operations. Co-operative studies were started during the biennium.

A utilization and manufacturing training program has been initiated for the Division's foresters. This program is being developed with a forest products association in North Carolina. On-the-job training is to be provided at member mills, stressing utilization and manufacturing problems. Graduates of this program can then better serve the interests of both the growers and users of North Carolina timber.

PEST CONTROL

General

The objective of the Pest Control Branch of the Forestry Division is the reduction of timber mortality and growth loss due to insects and diseases. Losses from these causes account for a significant portion of the timber drain. Timber mortality and growth loss due to forest pests must be reduced to a practical minimum. This reduction in loss will increase the forest growth allowing our wood-using industries to expand.

During the biennium the Pest Control Branch has found the cooperative working relations with the U. S. Forest Service most satisfactory. The program support from the U. S. Forest Service was started in 1964 and has been in the form of $15,000 annually to carry on survey, training and other general pest control activities. The U. S. Forest Service now has a well-functioning zone pest control office in Asheville from which valuable technical help is available from their forest entomologists and forest pathologists.

This additional Federal help enabled us to employ a full time pest control forester for eastern North Carolina during early 1964. This forester provided much needed help in working with special problems in the east and in keeping other Forestry Division personnel up to date with new technical information and procedures.

Pest Control training was given during the summer of 1964 and again during the early summer of 1966. All foresters and other interested persons were invited to attend these training sessions which were located in different areas of the state. Many industrial, consulting and public foresters attended. Approximately 280 attended the first group of training meetings and about 200 attended the second.

Regular District and County Forest Service personnel carry out the basic day-to-day pest control work in their own respective areas. However, special problems arise from several forest insect and diseases which required special emphasis. These were the southern pine beetle, balsam woolly aphid, pine weevils, white pine blister rust and oak wilt diseases.

SOUTHERN PINE BEETLE

From July 1, 1964, to June 30, 1966, the losses from the southern pine beetle have been greater than they have ever been in the recent history of North Carolina. This insect has been occurring in epidemic proportions in the upper Piedmont of the state. Six counties have borne the brunt of this loss in pine timber. These are Yadkin, Davie, Davidson, Iredell, Forsyth and Rowan counties. Lesser losses have occurred in the surrounding counties of Stokes, Guilford and Randolph.

In the lower Piedmont epidemics have been causing serious and continued losses in Vance and Granville counties. There has been some activity, but to a much lesser extent, in a few of the counties in northeastern North Carolina and the central part of eastern North Carolina.

The Division's efforts in combating this outbreak have been geared towards salvaging the infested trees. This, in addition to destroying the insects in the infested trees, enabled the landowners to receive a return for the trees which have been killed. This prevented an outright loss of values to the State. In addition to the salvage program, some chemical spraying had to be carried out in order to kill insects in trees which could not be salvaged. This involved only a few merchantable trees at any given location or trees too small for either pulpwood or sawtimber.

During the period of this report an estimated 918,960 trees have been salvaged and over 32,000 trees have been chemically treated. It is conservatively estimated that these trees, which were salvaged, contained over 40 million board feet of sawtimber and over 47,000 cords of pulpwood. This returned approximately $1⅓ million to the more than 6000 landowners.

At the end of the biennium the overall situation surrounding the southern pine beetle looks much improved. Control work is still in progress in the Piedmont section of the State.

BALSAM WOOLLY APHID

The situation surrounding the balsam woolly aphid has not changed dramatically during the last two years. There has been increasing mortality of the Fraser fir trees in four out of five natural fir areas in western North Carolina. Only the Richmond Balsam area along the Blue Ridge Parkway southwest of Asheville still remains free of the insect. Trees of the 7000 acre fir area in the Black Mountains have continued to die at a very rapid rate. This was the area where the aphid was first found.

The control effort made to protect approximately 100 acres of fir in Mt. Mitchell State Park continues to give satisfactory results. It has been three years since any spraying had to be carried out in this area. From a survey made in early summer of 1966 reinfestation has been found and respraying will have to be started in the early summer of 1967.

There has been some slight ray of hope given by the release of natural predators of this insect in the Mt. Mitchell area. At least three of these predators (other insects) have been able to over-winter and build up in succeeding years to the extent that they have been officially recognized as being established. It is not expected that these predators will ever give complete control of the aphid but it is hoped that their influence will help slow down the build up of the aphid.

PINE WEEVIL

The pine reproduction weevils, primarily the pales weevil, have continued to be a problem in poorly drained pond pine areas being reforested in southeastern North Carolina. In the spring of 1965 the Division cooperated with Riegel Paper Corporation and the U. S. Forest Service in carrying out an aerial spray program in an attempt to protect the newly planted seedlings. 1300 acres were sprayed with one pound of Aldrin per acre. The evaluation of this project found that this control did not give satisfactory results. In the spring of 1966 a pilot test involving another attempt at control was started. This, too, was done on a cooperative basis with the Riegel Paper Corporation and the U. S. Forest Service. The pilot test involved spraying seedlings in the nursery with DDT before they were out-planted. After the seedlings were out-planted and mortality approached 10% from the pine weevils, additional DDT was applied to the ground surface in dry, granular form. One pound of insecticide was applied per acre. The final results of this pilot test will not be available until late 1966. However, at the end of June 1966, after most of the damage from the weevils had occurred, less than 20% of the seedlings had been killed in areas which had received full treatment. In certain test areas which had received no treatment, the seedling mortality had exceeded 60%. It now appears that spraying seedlings in the nursery bed with DDT before planting will give very good control against this insect.

OAK WILT

The oak wilt disease caused by a fungus has been known to be present in North Carolina since 1951. During these 15 years it has remained largely confined to three mountain counties—Buncombe, Haywood and Madison. Several years ago one tree was found in Swain county. A few trees have been found in Jackson County. During the summer of 1964, a special perimeter survey extending 50 miles out from all known infected areas was carried out. It was thought that additional counties might be infected especially in the northwestern corner of the state since the adjacent counties in both Virginia and Tennessee were infected. No additional trees were found in outlying counties. During 1964 and 1965 the number of trees discovered in

the counties mentioned above were less than half the number during the average of the preceding years. This reduction in the number of trees found each year is interesting in that similar reductions have not occurred in the states in the north nor the upper midwest where mortality has continued to increase. The control method used in North Carolina has been different from the methods used in any of these areas. In North Carolina every infected tree which is found is cut down and sprayed with an insecticide—fungicide. This prevents insects from carrying spores of the oak wilt disease from the infected trees to healthy trees. The control methods employed in other areas do not include spraying the trees with an insecticide. Most of these other methods simply involve girdling the infected trees and leaving them standing or merely cutting them down without spraying.

WHITE PINE BLISTER RUST

White pine blister rust disease is considered as being endemic in North Carolina. This means that no major control is needed such as was carried out during the CCC program in the 30's. Instead continuous checking and small amounts of control work are completed to keep the disease from causing undue losses. Two men spend about nine months each per year in carrying out this work. They attempt to prevent new white pine plantations from being established in areas where they will be attacked by this disease. They also carry out some control work where natural stands and new white pine plantations need protection. The control work consists of the eradication of wild or cultivated currant and gooseberry bushes. This rust disease alternates between the white pine trees and these bushes. Therefore, if the bushes are destroyed for several hundred yards the white pines do not become infected. During the two winters of the biennum, this was being done and an estimated 5000 *ribes* bushes were destroyed and over 300 landowners were helped.

GEODETIC SURVEY

The Division of Geodetic Survey is the official representative of the Department of Conservation and Development in the field of Geodesy. The literal meaning of Geodesy is "dividing the earth," or that branch of surveying which determines the exact positions of points on the earth's surface, mathematically taking into account the curvature of the earth.

The Division of Geodetic Survey was created by the 1959 General Assembly when it passed the law, as set forth in Chapter 102 of the General Statutes, relating to Land Surveys and the Official Survey Base in the state. The duties of this division as stated in the statute are "to make or cause to be made from time to time such surveys and computations as are necessary to further or complete the North Carolina Coordinate System.

The number of usable survey control markers established by the U. S. Coast and Geodetic Survey prior to the establishment of this division (1960), was approximately 2,000. This figure is variable due to lack of knowledge as to how many markers have been destroyed. This installation has been over a period of approximately seventy years. The total number of markers installed by this division since its establishment in 1960 through June 30, 1966, is 2,045. The total number of control markers now established by all agencies (U.S.C.G.S., State, T.V.A., and military) is approximately 5,000.

New methods of computation have been implemented through the cooperative use of an IBM computer in the N. C. State Highway Commission enabling the division to increase its output of computations.

HISTORY OF OPERATION

The division's organization currently includes a director, assistant director, stenographer, field engineer, and eight engineering technicians.

In 1964 a reimbursable agreement was signed by the then Director of the Department of Conservation and Development, Mr. Robert L. Stallings, Jr., and Rear Admiral H. Arnold Karo, Director of the U. S. Coast and Geodetic Survey of the U. S. Department of Commerce. This agreement authorized the Division of Geodetic Survey of North Carolina to send its surveys to the U. S. Coast and Geodetic Survey for the final adjustment and publishing. They would then incorporate the North Carolina Surveys into the national control net and publish them. The one requirement by the U. S. Coast and Geodetic Survey was that the North Carolina surveys meet all accuracy requirements.

On June 18, 1965, the first project was forwarded to the U. S. Coast and Geodetic Survey for publishing. At the close of the subject biennium, computations concerning 381 of the total number of markers (2045) established since 1961 had been forwarded to the U. S. Coast and Geodetic Survey for review, adjustment, and publication. The following is a letter received from the U.S.C.G.S. regarding this work. (See letter opposite page)

CHANGE IN PERSONNEL

Mr. Philip C. Doran, Director of the Division, retired on June 30, 1965, to accept a position with the United Nations as Hydrographic Consultant in Seoul, Korea. Wilbur C. Fuller, Assistant Director for five years, was appointed Director on September 1, 1965. The position of Assistant Director was filled by Mr. J. Carl Dempsey on February 1, 1966; he resigned December 31, 1966, to accept a teaching position at Wilmington College.

EXPANSION OF DIVISION

Seven Engineering Technicians were requested in the "B" Budget of 1967-69 biennium to meet the demands of local governments and communities for the establishment of control markers due to their continued growth and de-

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCES SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
WASHINGTON SCIENCE CENTER
ROCKVILLE, MD. 20852

August 3, 1966

IN REPLY REFER TO: C122
Your reference:
Ltr. dtd. 7/26/66

Mr. Wilbur C. Fuller, Director
Division of Geodetic Survey
North Carolina Geodetic Survey
Department of Conservation and Development
Raleigh, North Carolina 27602

Dear Mr. Fuller:

The North Carolina Geodetic Survey is a unique organization. While other states, some municipalities and counties have geodetic surveying groups, their functions are either limited in scope, such as for highway or water resources needs or to general geodetic surveys of relatively small areas. The North Carolina Geodetic Survey is the only organization providing high-order geodetic surveys within the national horizontal control network for general usage on a statewide scale. The cost of engineering projects, land values and all types of necessary mapping, required for the rapidly developing urban and suburban areas, make it highly desirable, if not mandatory, that readily accessible high-order control stations be available. The development of microwave and electro-optical distance measuring instruments and the availability of theodolites have simplified the surveys for such projects. However, the cost of providing the necessary adequate control is often considered prohibitive by local governments and engineering companies. A few state subdivisions have faced this essential but difficult problem, but there have been few states that have elected to provide these services. There is little doubt, however, that in the future, many states will establish statewide geodetic survey units.

The North Carolina Geodetic Survey has demonstrated the capabilities and experience necessary to provide the densification of horizontal control surveys within the national network. It is not surprising that the state of North Carolina has taken the lead in this field for it was in 1933, as a result of a request of North Carolina that the State Plane Coordinate systems, in use at the present time throughout the United States, were developed. The North Carolina Geodetic Survey may very well serve as a model in the formation of similar organizations that must inevitably follow in other states.

The Coast and Geodetic Survey can express this confidence in the North Carolina Geodetic Survey for a number of reasons. First, the foundation of the North Carolina Geodetic Survey is firm, based upon the fundamental premise that quality can not be compromised for quantity; second, the view obtained through conversation and correspondence that the North Carolina Geodetic Surveys intends to upgrade their already high standards; and, third,

the evidence drawn from a critical review of the field records and computations and the adjustments of the surveys that have been submitted to date.

The Coast and Geodetic Survey has processed the field computations and records for seven projects and a complete review shows all specifications and field procedures for second-order traverse surveys have been strictly followed. The ability of the North Carolina Geodetic Survey to observe precise astronomic azimuths, where orientation control is necessary, has resulted in a significant increase in the accuracy of these surveys. The decision to observe well controlled third-order leveling along the traverse lines, rather than trigonometric leveling, will add another extremely useful product to those already obtained.

Adjustments have been completed for five surveys in the vicinity of Charlotte, Statesville, Roxboro, Roanoke Rapids and Mount Airy. The results of these adjustments are excellent. The average correction to an observed direction is less than one second and the average correction to a Geodimeter length is less than 1:100,000. The actual average correction to a Geodimeter length approximates the inherent precision of this instrument or about two centimeters. Only two Geodimeter lengths received adjustment corrections in excess of 1:25,000 and some incompatibility of the fixed control may have contributed to these changes.

The adjusted data for these surveys will of course be placed in the Coast and Geodetic Survey published files.

Sincerely yours,

H. R. Lippold, Jr.
Commander, USESSA
Acting Chief, Geodesy Division

velopment and the vital importance of such control markers in their future expansion and growth. The increase in personnel would enable the division to establish approximately one thousand (1,000) control markers a year instead of the present four hundred (400) markers. Since the ultimate objective for a completed coordinate system for North Carolina is one control marker for each square mile of land area, this would take a total of approximately 49,000 control markers to complete the survey. This means that should we obtain the additional personnel requested and thereby increase our production to 1,000 control markers per year, it would still take, at this rate, 44 years to complete the coordinate system for North Carolina.

Also, third order vertical control will be established on all future control markers. The division has obtained the State Highway Commission's old mylar maps, or tracings, of each county, upon which the location of all control stations will be recorded. This improvement will enable the division to keep an up-to-date map of all the stations located throughout the state, and will also allow the division to furnish engineers and surveyors with the latest maps showing the location of all control markers. If anyone needs these mylar tracings, they can be furnished at the cost of reproduction.

Actual use of the markers by surveyors, engineers, and more noticeably by communities, cities, and counties has increased greatly. This increased use has been a time and money saver for the communities and a source of satisfaction to this division.

A total of 2045 markers has been installed by this division from its establishment in 1960 through June 30, 1966. The number of control stations established in the biennium, 1964-66 and their distribution throughout the state is shown below.

ESTABLISHMENT AND DISTRIBUTION OF CONTROL MARKERS, 1964-1966

Area	County	No. of Stations
Salisbury	Rowan	61
Mount Airy	Surry	36
Gastonia	Gaston	116
Goldsboro	Wayne	69
Dunn	Harnett	72
Lumberton	Roberson	60
Tarboro	Edgecombe	24
N. Charlotte	Mecklenburg	94
Roxboro	Person	11
Monroe	Union	53
Raleigh	Wake	130
Washington	Beaufort	25
Aurora	Beaufort	48
Albemarle	Stanly	28
Morehead City	Carteret	8
	TOTAL	835

The Division of Geodetic Survey will continue to provide this service to other state agencies, cities, counties, and towns in the establishment of additional control markers to meet demands as they arise in the future.

MINERAL RESOURCES

The Division of Mineral Resources is the official representative of the Department of Conservation and Development in the fields of geology, mineral resources, mining and the treatment of minerals. As designated by State law, "It shall make such examination, survey and mapping of the geology, mineralogy and topography of the State, including their industrial and economic utilization, as it may consider necessary." The primary objective of the Division is to improve the general welfare of North Carolina through a better understanding and a wiser use of its geology, topography and mineral resources.

In order to fulfill its responsibility as set forth above, the Division of Mineral Resources conducts the following programs of work and services:

1. Through its own personnel, and in cooperation with the United States Geological Survey and other agencies, the Division conducts systematic areal surveys on the geology and mineral resources of specific areas such as individual counties or 15-minute and 7½-minute quadrangles. Such work includes detailed geologic mapping, systematic sampling, petrographic study, and a general appraisal of the geology and mineral resources of each area surveyed. This is a continuing, long-term program which is intended to eventually provide detailed geologic and mineral resource coverage for the entire state.

2. The Division carries out, in cooperation with various state and federal agencies and industrial concerns, a wide range of mineral investigations restricted to the study of a specific mineral or mineral resource. Individual deposits and prospects are studied, mapped and sampled. Mineralogical and petrographic studies are carried out and a general appraisal is made of each deposit and the resource as a whole.

3. The Division cooperates with landowners, prospectors, small miners and citizens of the state by identifying and evaluating specimens of rocks and minerals submitted for identification. Also, upon request, mineral deposits are examined and information furnished as to their value and uses when it appears that the furnishing of such information will advance the general welfare of the State.

4. The office of the Division of Mineral Resources serves as a clearing house for the dissemination of technical information gathered through its programs of work and in cooperation with other agencies. This information is made available for distribution through the publication of bulletins, economic papers, information circulars, and reports of investigations. These publications, in addition to being of great practical value to mining companies and individuals, are of considerable educational value and are sold at nominal prices intended to cover the cost of printing.

Mineral Production

During each year of the period covered by this report, mineral production in North Carolina established a new record high. In 1964, mineral production was valued at $55.7 million and in 1965 at $60.4 million. This represents a 17.4 percent increase over the preceding biennium and reflects the increasing importance of the mineral industry to state's overall economic development.

Principal minerals mined were stone, sand and gravel, feldspar, mica and lithium minerals. North Carolina was the only producer of sheet mica (1965), and ranked first among the states in the production of lithium minerals, producing 98 percent of the national total; feldspar, 45 percent; and scrap mica, 56 percent; second in the production of olivine, 32 percent; crushed granite, 23 percent; and third in talc; with 13 percent of the national total. Leading mineral producers were Superior Stone Company, Ideal Cement Company, Nello L. Teer Company and W. E. Graham and Sons. Texas Gulf Sulphur Company began producing phosphate from its new mining facilities in Beaufort County during April, 1966, but production figures will not be available until the end of 1966.

As reported by the U.S. Bureau of Mines, mineral production figures include only the mine value of the mineral product and do not take into account any values added by processing or manufacturing. If the value of the state's mineral production was combined with the value added by processing and manufacturing, plus the value of stone and glass products manufactured in the state from both imported and native mineral products, it is conservatively estimated that the average annual value of the mineral industry to the economy of North Carolina is in excess of $150,000,000.

Developments in the Mineral Industry

Since 1961 the dominent activity in the North Carolina mineral industry has been the discovery, exploration, and development of the vast phosphate deposit in Beaufort County. This deposit underlies over 700 square miles of the eastern two-thirds of Beaufort County and contains on the order of 10 billion tons of ore. It represents one of the largest known phosphate deposits in the world and its development will have a profound effect on the state's industrial development for many years to come.

After two years of exploration and an experimental test mining program, Texas Gulf Sulphur Company announced on April 3, 1964 that it would invest $45 million in a phosphate mining operation designed to recover 3 million tons of phosphate concentrate annually at their Lee Creek site. On April 1, 1966, Texas Gulf Sulphur Company shipped the first load of phosphate concentrate mined and processed at its Lee Creek facilities. By the end of June, 1966, the mine was producing 18,000 tons of ore per day. The mill was producing 6,000 tons of concentrate per day that averaged 30.7 percent P_2O_5.

In April, 1965, Texas Gulf Sulphur Company announced plans for a $32 million fertilizer complex to be constructed adjacent to its mining operations at Lee Creek. This fertilizer complex will include the world's largest phosphoric acid plant, a solid fertilizer plant and the world's largest sulphuric acid plant. There plants are designed to produce 640,000 tons of phosphoric acid annually, 415,000 tons of which will be used to produce 357,000 tons of triple superphosphate, and 220,000 tons of phosphoric acid will be sold on the world market. As of the close of the biennium, contracts for the construction of the fertilizer complex had been let and production is expected to start in 1967.

Magnet Cove Barium Corporation, which holds a lease on 16,312 acres of state-owned submerged lands on the Pungo River, continued to carry out their experimental mining program during the biennium. Indications are that this company has made considerable progress in perfecting a unique hydraulic method for economically mining phosphate from depths of over two hundred feet below land surface through a system of wells.

Pursuant to a resolution adopted by the Board of Conservation and Development on February 4, 1964, the state-owned submerged lands underlying the southern half of the Pungo River, and designated as Area J, consisting of 3,648 acres, and Area K, consisting of 3,942 acres, were advertised for lease on a sealed bid basis. Bids were received until 2:00 P.M., November 24, 1964.

Two companies, Magnet Cove Barium Corporation and FMC Corporation, submitted bids on both areas. Magnet Cove Barium Corporation bid 3.7 percent royality on the first marketable phosphate product, 10 percent on other minerals and 5 percent on sand and gravel. FMC Corporation bid 7.83 percent royality on the first marketable phosphate product, 10 percent on other minerals and 10 percent on sand and gravel.

In accordance with the resolution adopted by the Board of Conservation and Development on February 4, 1964, the Director, with the vote of approval of the Mineral Resources Committee, recommended and the Council of State approved on December 22, 1964, that FMC Corporation be awarded Area J and Area K.

On March 24, 1965, FMC Corporation's option-to-lease agreement on Area J and Area K became effective. Since acquiring these two state lease areas, FMC Corporation has carried out an exploratory drilling program around the periphery of their lease areas adjacent to the river, and has conducted

several preliminary well pumping experiments. A drilling program from a barge and additional well pumping tests were scheduled for the summer of 1966.

North Carolina Phosphate Corporation, which controls considerable land areas on the south side of the Pamlico River in the same general area as Texas Gulf Sulphur Company, completed an extensive exploratory drilling program in 1964. However, since that time they have not made public any plans for developing their phosphate deposits in Beaufort County.

During the period covered by this report, there was more activity in the search for oil and gas than at any other time in the state's history. Mobil Oil Corporation, Edwin Foster Blair and Associates and North Carolina Oil and Gas Company drilled a total of 13 exploratory wells that totaled 52,666 feet.

In December 1963, the lease on state-owned submerged lands held by Coastal Plains Oil Company was assigned to Mobil Oil Corporation. Under the terms of this lease agreement a minimum of 12,000 feet of exploratory drilling must be completed every two years. In compliance with these terms, Mobil Oil Corporation initiated an exploratory drilling program in June, 1965. The location and depth of these holes are as follows:

Mobil No. 1, located in Albemarle Sound approximately 3 miles north of Durante Island. Total depth 5,255 feet.

Mobil No. 2, located in Pamlico Sound approximately 15 miles north-northwest of Cape Hatteras. Total depth 8,381 feet.

Mobil No. 3, located in Pamlico Sound approximately 18 miles west-northwest of Cape Hatteras. Total depth 7,266 feet.

Between September 25, 1965 and December 22, 1965, Edwin Foster Blair and Associates, New York City, drilled five exploratory holes in the northeastern section of the Coastal Plain. The location and depth of these holes are as follows:

Blair No. 1, located in Camden County, 7 miles northeast of Elizabeth City. Total depth 3,742 feet.

Blair No. 2, located in Currituck County, 2 miles north of Bertha. Total depth 4,553 feet.

Blair No. 3, located in Dare County, 2 miles south of Manteo. Total depth 6,296 feet.

Blair No. 4, located in Dare County, 4 miles southeast of East Lake. Total depth 5,145 feet.

Blair No. 5, located in Hyde County, 2 miles east of Nebraska. Total depth 5,576 feet.

In February, 1966, North Carolina Oil and Gas Company, began an extensive oil and gas exploration program centered around Pender and Onslow counties in the southeastern section of the Coastal Plain. By the end of the biennium, five exporatory oil test wells had been completed. The location and depth of these holes are as follows:

Cowan No. 1, located in Pender County at intersection of Highways 50 and 53. Total depth 1,004 feet.

Batts No. 1, located in Pender County, 2 miles northwest of Surf City. Total depth 1,493 feet.

James No. 1, located in Onslow County, 9 miles southwest of Jacksonville. Total depth 1,254 feet.

International No. 1, located in Onslow County, 1.5 miles south of Verona. Total depth 1,294 feet.

Batts No. 2, located in Pender County, 1 mile northwest of Surf City. Total depth 1,462 feet.

Shows of gas were reported in two of these wells, but development tests failed to produce a significant volume of gas and the wells were plugged and abandoned. North Carolina Oil and Gas Company plans to continue their exploration program with additional holes scheduled for locations in Pender, Onslow, New Hanover and Brunswick counties.

In October, 1965, North Carolina Oil and Gas Company requested that they be granted an oil and gas exploration lease on state-owned submerged lands

lying in Carteret, Onslow, Pender, New Hanover and Brunswick counties. The Board of Conservation and Development recommended that this lease be granted to North Carolina Oil and Gas Company and in April, 1966, it was approved by the Governor and Council of State.

Another significant development in mineral exploration in North Carolina has been the recent interest by several major mining companies in the central Piedmont section of the state. These companies are exploring for new deposits of sulphide minerals which are now in short supply. This area of the state was once the leading gold producing section in the United States and it is considered to have excellent potential for important mineral deposits.

Work of the Division

The work of the Division of Mineral Resources consists of two main programs: (1) mineral commodity studies, and (2) geologic studies. Commodity studies cover specific minerals or mineral deposits such as asbestos, clays and shales, pyrophyllite, etc. Geologic studies include detailed geologic mapping and examination of mineral deposits.

Commodity studies in progress during the biennium 1964-1966 included clay and shale, mica schist, garnet, feldspar, and pyrophyllite.

The clay and shale project is a long term cooperative program with the U.S. Bureau of Mines. Under the terms of this agreement, the Division collects clay and shale samples and conducts any necessary geological field studies, and the U.S. Bureau of Mines performs a series of pyrochemical tests to determine their possible economic applications. Since this program was initiated, white burning clays from the eastern Piedmont and western parts of the state, and red burning clays and shales from the Triassic basins have been sampled and tested. North Carolina continues to be the leading producer of bricks in the United States and it is believed that this clay testing program will prove to be of great value in determining the state's clay resources for future development.

Personnel from the Division's branch office in Asheville are cooperating with the North Carolina State University Minerals Research Laboratory in studies to investigate the possibility of substituting mica schist for scrap mica in producing ground mica, and in determining the abrasive quality of several garnet deposits. A report on the feldspar industry of North Carolina is also being prepared by the Asheville Branch office personnel.

Detailed geologic mapping programs in progress during the biennium included Orange and McDowell counties. Fieldwork on the Orange County project has been completed and the final report is in preparation. Steady progress is being made on the McDowell County project, but it will be at least two years before it is completed.

On July 16, 1964, Dr. Jasper L. Stuckey retired as State Geologist, a position he held in the Department of Conservation and Development in 1925-1926 and from 1940 until 1964. Although Dr. Stuckey retired as State Geologist, he remained with the Division of Mineral Resources until March 1965. During this time he completed the manuscript for "North Carolina: Its Geology and Mineral Resources," a comprehensive treatise on the physiography, geologic history, development of geologic work in North Carolina, and mineral resources. This volume represents the first complete geologic report on North Carolina since 1875. It required four years of exhaustive research and labor to prepare and it will serve as a lasting tribute to one of North Carolina's most distinctive scientists and outstanding citizens.

Cooperative Programs

During the period covered by this report, cooperative programs were continued with the U.S. Geological Survey and the U.S. Bureau of Mines. Matching fund programs with the U.S. Geological Survey include geological mapping and mineral resource studies in the Denton 15-minute quadrangle in Davidson County and topographic mapping in Stokes and Surry counties.

The Denton quadrangle project has been completed and the map and report were being prepared for publication at the close of the biennium. Topographic mapping in Stokes and Surry counties was continued and the Pilot Mountain, Hanging Rock, Pinnacle and King 7½-minute quadrangles were published during the biennium.

Miscellaneous Activities

In addition to the major programs of work as outlined above, the Division of Mineral Resources distributes technical information on the geology and mineral resources of North Carolina to landowners, prospectors, mining companies, petroleum companies, school children and other interested persons through correspondence and office visits. Hundreds of rock and mineral specimens were identified and evaluated for citizens of the state and more geologic maps, bulletins, economic papers, and information circulars were sold during the biennium than during any preceding biennium in the history of the department.

Personnel of the Division participated in or conducted geological fieldtrips for the Groundwater Branch of the U.S. Geological Survey, the Carolina Geological Society, the Atlantic Coastal Plain Geological Association, and geologists involved in research at the University of North Carolina and North Carolina State University. Also, four scientific papers were presented at geological society meetings by staff members and a number of talks on the geology and mineral resources of North Carolina were given before school groups, rock and mineral clubs and civic organizations.

Twenty graduate students at the University of North Carolina and North Carolina State University received research grants from the Division's Special Projects fund during the biennium. The grants ranged from $62.00 to $600.00 and were used by the students primarily for field expenses, rock thin sections and small items of equipment and supplies in connection with their thesis problems. The availability of these grants allow the graduate students a wider range in the selection of their thesis areas. As a result, geological research is now being conducted throughout the state, and significant contributions are being made by graduate students to our knowledge of the geology of North Carolina.

STATE PARKS

"Conservation can be defined as the wise use of our natural environment; it is, in the final analysis, the highest form of national thrift—the prevention of waste and despoilment while preserving, improving and renewing the quality and usefulness of all our resources."

John F. Kennedy

We are living in an age that has produced more technological advances than at any time in our history. These advances have provided us with a standard of living of unprecedented magnitude and quality. We are a nation of unparalleled mobility coupled with more leisure time and money than at any other time in our history. The use of our increased leisure time has become one of our great social problems. Properly used it is unquestionably a definite social and cultural asset, misused and the liability is almost incomprehensible.

Any state conservation program must include adequate provisions for the recreational use of natural resources so that we may meet both our material and non-material needs in our quest for desirable usage of leisure time. No conservation program can possibly be successful unless it places the same emphasis on recreational use of natural resources as is on forest management, wildlife protection, water conservation and intelligent practices in harvesting natural resources.

Our future generations must not be denied their right to use and enjoy a portion of our unscarred landscape nor the wildlife and aesthetic ramifications associated with it. State Parks can provide no greater service than to establish, develop and operate a system of state parks which will guarantee the preservation, improvement and renewal of quality of those natural resources for which it is responsible. Thus, it becomes apparent that in order for the Division of State Parks to fulfill its basic purposes and to attain its ultimate goal, it must SERVE THE PEOPLE OF NORTH CAROLINA AND THEIR VISITORS BY:

1. The preservation and protection of natural areas of unique or exceptional scenic value not only for the inspiration and benefit of the present generation but for generations yet unborn. This is THE BASIC SERVICE and must never be lost sight of.
2. The establishment, development and operation of state parks which provide for recreational use of natural resources and outdoor recreation in natural surroundings.
3. The portrayal and interpretation of plant and animal life, geology and all other natural features and processes included in the various State Parks and Natural Areas.
4. The preservation, protection and portrayal of scientific sites of statewide importance.

PROGRESS REPORT

In order to better evaluate progress made by the Division of State Parks, its work is divided into nine major phases.

1. Operation for Public Use
2. Maintenance
3. Interpretive and Public Use Programs
4. Protection and Law Enforcement
5. Business Management
6. Information and Education
7. Personnel Administration
8. Planning, Development and Construction
9. Cooperation with and services to other agencies

A report of progress in each of the nine phases of work is summarized as follows:

I. OPERATION FOR PUBLIC USE

The quality of State Park use is vividly illustrated by the vast numbers of family groups that visit these areas in ever increasing numbers each year. Activities designed around a natural setting invite family unity, enjoyment and participation. It becomes clear to these family groups that they have a responsibility in the preservation of our natural resources for the use and benefit of their own descendents and that the values received from State Parks can only be measured by an inner feeling of self satisfaction.

Although no new parks were added during the biennium, visitation passed the four million mark for the first time in history—an increase in visitation of 12.58% over the preceding biennium.

For several years camping facilities have been heavily taxed and burdened with the demands made on them. Expansion of the camping areas at Hanging Rock State Park and Morrow Mountain State Park have eased the demands somewhat in these two parks. The 1965-66 biennium recorded a record 119,581 camper days which represented an increase of 17.35% over the last biennium.

Increased public use in all phases of operation dramatically points out the need for additional parks and facilities not only needed for summer months which receive the greatest impact, but also to increase servicces for the ever increasing numbers of visitors coming to the parks in the winter.

On February 8, 1966 the Board of Conservation and Development passed a resolution combining the William B. Umstead and Reedy Creek State Parks into one administrative unit under the name of William B. Umstead State Park. These two areas, lying contiguously within Wake County, were combined so that: "They might be more efficiently protected from fire and vandalism, and administered as one unit with no changes in the existing personnel structure."

II. MAINTENANCE

A good preventative maintenance program is the keynote to diverting possible major repairs to public use and service facilities. No matter how good the program, deterioration from age and overuse of facilities results in the necessity of major repair and capital outlay for replacement or expansion. There are buildings and facilities which have reached the stage where repair is no longer feasible nor practical.

Maintenance and repair is always a major phase of park work. Much work has been done this biennium in the painting and repair of structures and signs; repair and extension of nature, hiking, fire and truck trails; and the construction of new signs, fireplaces and picnic tables. There have also been major renovations to inadequate, outdated and insufficiently operating water and sewage systems.

Our field personnel are to be commended for their efficiency in the curtailment of many potential major maintenance problems.

III. INTERPRETIVE AND PUBLIC USE PROGRAMS

"Our life would stagnate if it were not for the unexplored forests and meadows which surround it. We need the tonic of the wilderness. We can never have enough of nature. We must be refreshed by the sight of inexhaustable vigor, vast and titanic features, the seashore with its wrecks, the wilderness with its living and decaying trees. . . ."

Thoreau

One of the most exacting and important phases of park operation is the portrayal and interpretation of natural features, processes and phenomena which occur in the various state parks. Park visitors thirst more and more for their minds to be trained in how to get maximum enjoyment from the natural environment, to be able to grasp acute discernment of the impact nature has had on the earth for these many eons and the role man has in trying to recreate from the works of the Creator. Through proper inter-

pretation the park visitor is aided in his belief of conserving NATURAL resources to conserve HUMAN resources. Thus, he becomes a park user of the highest quality with the desire that the same natural areas he enjoys will remain unspoiled for the benefit of our unborn generations.

During the biennium more people participated in both active and passive interpretive programs than ever before. New self-guided nature trails were opened and existing trails extended, revised and improved. Laymen's herbariums were installed at Morrow Mountain and Hanging Rock State Parks to aid the visitor further in his identification of native flora.

Seasonal naturalists contributed much, not only through their talks, campfire programs, walks and temporary displays, but through the collecting of new specimens and data, photography and natural history surveys.

Much planning is being done toward the development of new interpretive devices, museums, wayside exhibits and methods of presentation.

A three day naturalist training school was conducted for the first time with major emphasis being placed on interpretive techniques and methods and applications of individual skills. This program enabled the naturalists to get their programs off to the strongest start yet and to improve even more on the high quality of presentation already present. To supplement this school, a naturalist training handbook is being written.

As in the past, several parks offered free swimming and life saving courses.

IV. PROTECTION AND LAW ENFORCEMENT

Protection and law enforcement forms a vital part of the state park program. The parks must be protected from fire, vandalism and trespass; since all parks are wildlife sanctuaries, their wildlife must be protected from hunting, trapping, and other molestation. This is necessary if we are to fulfill the basic service of PRESERVING AND PROTECTING our outstanding scenic and natural areas.

Preserving law and order is primarily a job of educating the public to the basic purposes of the parks. When this is done, a wholesome atmosphere for family enjoyment is created and maintained. All Park Ranagers and Park Superintendents, as special peace officers, have the authority to deal with the rare individual who is bent on deliberate destruction or belligerency.

The greatest potential sources of mass destruction of our park lands lie in the dangers of fire, insects and disease. If it were not for the splendid degree of cooperation offered by other agencies and the efforts and interests of our park neighbors, protection in this area would indeed be difficult.

On November 11, 1964 an extremely dangerous fire condition existed when a fire was spotted in Hanging Rock State Park. Without question or hesitation, local citizens and friends rushed to the scene to give battle. They were joined almost immediately by units from five nearby towns and rural fire departments. In spite of high winds and acute dryness, the fire was contained to three acres. Beyond question, this response saved hundreds of acres of woodlands from destruction.

On November 19, 1964 an alert citizen reported a fire at Morrow Mountain State Park and the resulting action by park personnel limited the fire to its point of origin—an area of about four feet square.

Twelve acres were burned at Pettigrew State Park on December 5, 1965 when an adjacent landowner, who was doing control burning, let the fire escape.

The Division of Forestry not only gives us outstanding support and cooperation in fire control, but also lends the same degree of determination in the detection and aid in control of forest pests.

There was a severe outbreak of Southern Pine Beetle at Hanging Rock State Park and minor outbreaks at Morrow Mountain and Duke Power State Parks. All were successfully controlled.

The Balsam Woolly Aphid at Mount Mitchell continues to be a definite threat to the boreal forest in the park. Hundreds of thousands of fir trees have already been killed and countless others are due for devastation. A spraying program aimed at protecting a scenic zone along the roads and around public

high use areas was completed and with a desirable degree of control obtained. Much research and study is still to be done with an active control operation being maintained.

STATE LAKES

The Division of State Parks is charged with the administration of seven State-owned lakes; Black, Jones, Salters, Singletary and White Lakes in Bladen County; Lake Waccamaw in Columbus County and Lake Phelps in Washington and Tyrrell Counties.

Over the years the Division has sold special licenses for boats operated on any of these State-owned lakes. The bulk of these licenses have been sold at White Lake and Lake Waccamaw with receipts amounting to approximately $14,000 per year. This revenue plus appropriation has been used for the purchasing, placing and maintenance of safety piling to protect swimming areas, and for special Lake Wardens with patrol boats and other equipment necessary for the enforcement of State Lake Regulations. These regulations are designed for the protection and preservation of the lakes for the recreational benefit not only for the present generation, but also for the benefit of generations yet to come.

In 1959 North Carolina's Boating Safety Law was enacted and the responsibility for its administration and enforcement was delegated to the Wildlife Resources Commission.

Under this Boating Safety Law all boats with motors of over 10 horsepower must be registered and have a number assigned. The fee charged for this registration of all boats operated on any waters of the State made the special fee for their use on the State-owned lakes a second 'taxation' for one apparent purpose.

To correct this situation, the 1965 General Assembly enacted a bill to amend the General Statutes of North Carolina relating to vessels on State-owned lakes. This bill amended Chapter 75A, Section 15, Subsection (b), Volume 2C of the General Statutes to read as follows:

"(b) The Wildlife Resources Commission, to the exclusion of any other state agency, is hereby authorized to make special rules and regulations with reference to the safe and reasonable operation of vessels on any waters within the territorial limits of any subdivision of this State, including but not limited to State-owned lakes. Provided that nothing in this section shall be construed as affecting the operation or maintenance of State-owned physical facilities at State-owned lakes, or as requiring the Wildlife Resources Commission to provide special wardens at State-owned lakes."

The wording of this amendment makes it quite clear that the responsibility for the administration of these State-owned lakes—their protection and preservation still rests with the Division of State Parks. A replacement of the loss in revenue will be necessary if the Division is to continue to bear this responsibility with any degree of success.

A request was made by a development company to drain Black Lake for the purpose of cleaning out debris which has accumulated over the years. Permission was granted to allow this project to be done under the supervision of the Division of State Parks and subject at the following conditions:

1. That plans for development of the area will include provisions for public access for full recreational use, and
2. That the water level be restored and constantly maintained at the normal high water mark subject only to natural causes.

Since the development plan included adequate provisions for public access, in accordance with condition number one, the company was allowed to begin work. The clean up of accumulated debris was going on at the time of this report.

V. BUSINESS MANAGEMENT

The accounting section for the Division of State Parks, which consisted of an Accountant I and an Accounting Clerk I, was transferred along with

their responsibilities to the Department Auditor's office. All future accounting functions of the Division is to be done by the Department Auditor.

VI. INFORMATION AND EDUCATION

The primary purpose of the information and education phase of operation is designed not only at increasing attendance but at presenting to the public the opportunities state parks offer for personal enrichment and satisfaction.

Excellent coverage was given to the parks by radio, television, newspapers and magazines. Both Raleigh Office and field personnel presented programs to various civic clubs, womens clubs, camping organizations and several technical talks were given to professionals in the field of biology and parks administration.

Hundreds of inquiries are received each year and when possible answered the day they are received.

A new edition of the popular brochure, "How to Enjoy Your North Carolina State Parks," was printed and is being distributed. Several new information sheets and maps have also been printed and are being distributed.

The rapid growth of North Carolina is quickly reducing the amount of available undisturbed woodland. For this reason, a tremendous amount of research is being done by various universities and colleges in the natural areas of the parks. School camps and youth groups continue to participate at an increasing rate in the natural science program.

VII. PERSONNEL ADMINISTRATION

Any organization is only as good as its employees. To provide quality service you must have individuals who are dedicated to the purpose of providing that service. State parks employees are such individuals. They take extreme pride in their organization, themselves, and the particular work they are doing.

Personnel changes in the Division are shown by the tabulation below. Vacancies were filled by promotion where possible.

State Park	Position	Date Vacancy Occurred	Replaced by or new Position filled by	Date of Replacement/ job filled
Fort Macon	[1]Park Ranger I	7/31/64	New Employee	2/15/66
Hammocks Beach	[2]Park Ranger I	12/1/64	New Emloyee	12/1/64
	[3]Park Ranger II	9/25/65	Promotion of Park Ranger I from Jones Lake	10/1/65
	[3]Park Ranger I	10/14/65	New Employee	11/1/65
Hanging Rock	[3]Park Ranger I	9/14/64	New Employee	11/16/64
Jones Lake	Park Ranger I	New Position	Transfer of Park Ranger I from Hammocks Beach	12/1/64
	[1]Park Ranger I	10/1/65	New Employee	1/1/66
Morrow Mountain	[3]Park Ranger I	7/15/64	New Employee	10/1/64
	[1]Park Ranger I	2/1/65	New Employee	3/1/65
Mount Mitchell	[3]Park Ranger II	9/8/64	New Employee	11/16/64
Pettigrew	[3]Park Supt. I	8/31/64	Promotion of Park Ranger II from William B. Umstead	1/1/65
Wm. B. Umstead	[1]Park Ranger II	1/1/65	Promotion of Park Ranger I from Morrow Mountain	2/1/65
Raleigh Office	Civil Engineer II	New Position	New Employee	9/4/65
	[3]Accountant I	10/10/65	Position Abolished	
	[3]Civil Engineer III	4/15/66	New Employee	6/27/66
	[3]Civil Engineer II	5/27/66	Position not yet filled	

1. Vacancy caused by promotion of employee
2. Reassignment to another park
3. Vacancy caused by resignation

In addition to the personnel changes shown, the Landscape Architect I position was reclassified to Civil Engineer II.

Personnel training is a necessary step in maintaining an effective and efficient organization. On-the-job training, home study, extension courses,

workshops, staff conferences and annual park superintendents' meetings were the major ways in which personnel training was carried out.

The salaries of all summer personnel were adjusted to assure a minimum wage of $1.00 per hour in compliance to the new State Minimum Wage Law.

VIII. PLANNING, DEVELOPMENT AND CONSTRUCTION

Much thought and planning goes into the development of a park. Properly done it will provide for maximum use of natural resources with minimum infringement. Detailed studies and inventories must be made before facility development can begin.

Capital improvements during the biennium included the following:

Cliffs of the Neuse State Park:

A new well was drilled and a pumphouse constructed in conjunction with an expansion and overall improvement of the water supply system. An underground power supply to the museum was installed. Land surveys were completed for the acquisition of additional lands adjacent to the park.

Duke Power State Park:

The entrance road and parking area for the bathhouse were paved; water and sewage systems were completed. Construction of a modern bathhouse, refreshment stand and sun shelter were completed and opened to the public on July 16, 1965. Plans and specifications are nearing completion for the maintenance and service buildings, superintendents and rangers residences.

Fort Macon State Park:

Jetty construction was completed as part of an overall beach erosion control plan. A considerable amount of dredging was done in order to build up the beach to acceptable standards. Residence, park office and service building were completed.

Hammocks Beach State Park:

Efforts at dune fixation in the vicinity of the maintenance and service area, along the access road from the ferry dock to the bathhouse, and in areas of severe sand migration were continued by the planting of beach grass and various trees and shrubs. Major renovations to the water supply system were completed.

Hanging Rock State Park:

A new underground electric power supply cable was installed to serve the vacation cabins, camping area and bathhouse. A 35 site camping area addition with washhouse was completed and the camping area access road paved. Additions to the maintenance and service area were completed and a residence constructed.

Jones Lake State Park:

A new bathhouse was constructed, complete with a new nitrification field.

Morrow Mountain State Park:

A 30 site camping area addition with washhouse was completed. A new road and parking area for the Kron House restoration was graded and paved. A residence and an addition to the garage were also constructed.

Mount Jefferson State Park:

Guard rails were erected at the overlook. A well was drilled to serve the maintenance and service area. Plans and specifications are nearing completion for the maintenance and service buildings and rangers residence.

Mount Mitchell State Park:

Roadside plantings and stabilization work along the entrance road were completed. Stone retaining walls and curbing were installed at the summit parking area. Force account work on a new refreshment stand and public toilet additions and park office is progressing at an excellent rate.

Pettigrew State Park:

A new boat launching facility has been constructed and is complete with the exception of one small cat walk yet to be built.

Weymouth Woods—Sandhills Nature Preserve:

An architect has been employed to design the proposed Interpretive Center and a well has been drilled to supply this structure.

William B. Umstead State Park:

Crabtree Creek Section Improvements and an enlargement of the water supply system for the group camps, maintenance and service area, camping area, and picnic area were completed. A new personnel barracks, superintendent's residence, and a lumber and plumbing storage building were constructed.

Reedy Creek Section A new garage, workshop and residence were completed. A new entrance road was graded, gravel and curbing was installed in the main parking area. A new elevated water tank was erected.

Land Acquisition:

Very little land was added to the State Parks System during this biennium. Land acquisitions that were made were necessary to round out some of the park boundaries.

Cliffs of the Neuse State Park: 18.93 acres by purchase from J. L. Outlaw and wife on April 20, 1966. 4.97 acres by purchase from J. L. Outlaw and wife on April 20, 1966.

Mount Jefferson State Park: 65.75 acres from the Tucker Estate on May 7, 1965.

Several areas were investigated for possible inclusion in the State Parks System and additional field investigations and surveys have been conducted at Weymouth Woods—Sandhills Nature Preserve.

IX. COOPERATION WITH AND SERVICES TO OTHER AGENCIES

The Division rendered cooperative and consultation services to and cooperated in a variety of projects with many private and public agencies and several institutions of higher learning.

A debt of gratitude is rightfully due to the Division of Forestry for their cooperation in fire and pest control, the United States Forest Service for their participation in the Balsam Woolly Aphid Project, and to the State Highway Commission in many different construction projects.

THE GOAL

North Carolina is recognized as a very progressive state. Progress is necessary in ALL phases of state government to meet the total needs of its citizens. Renewed interest must be given to state parks in order that this area of responsibility be fulfilled. One of America's great conservationists, Ernest Swift, said, "Conservation is no longer a pleasant hobby, but a matter of life and death." State Parks today stand at a critical cross roads. To be able to move forward on the road of service, it is imperative that the following steps be taken:

A. PROVIDE LAND PURCHASE FUNDS FOR THE ACQUISITION OF NEW STATE PARKS.

In 1915 the legislature provided $20,000 for the purchase of Mount Mitchell, our first state park. Not only was it the first but it was also the *last* state park to be purchased in its entirety by the taxpayers of North Carolina. All of the remaining state parks have been given to the people of North Carolina by the Federal Government or through the generosity of some of her truly outstanding citizens. It must be

realized that the days of land gifts are rapidly becoming a thing of the past and that new areas must be purchased to bring state park services to all sections of North Carolina and to prevent the overuse and consequent deterioration of existing state parks.

Millions of dollars each year are spent on the preservation of antiquities and art works of the old masters. Natural areas are like the works of these old masters; that is, once they are destroyed they are gone forever and nothing man can do in all his "brilliance" can bring them back. And yet, no money is being spent to preserve any portion of our natural landscape. The acquisition of certain natural and scenic areas must be done in the immediate future to save them from destruction.

B. PROVIDE THE ADDITIONAL TECHNICAL PERSONNEL REQUIRED FOR SOUND PLANNING AND ECONOMICAL DEVELOPMENT OF THE STATE PARK SYSTEM:

Additional technical personnel are essential for continuing sound planning and economical development of the state park system.

The impact being felt in the areas of natural science education for both the general public as well as public schools and institutions of higher learning definitely points toward the need of additional interpretive personnel if the Division is to make the required progress in this area.

C. PROVIDE THE CAPITAL IMPROVEMENTS APPROPRIATION REQUIRED TO COMPLETE LAND ACQUISITION AND DEVELOPMENT AT EXISTING STATE PARKS:

Several parks are seriously handicapped by irregular boundaries and/or interior holdings. These situations need to be corrected to enable further development for public use and protection of state property from fire, vandalism, hunting and other danagers.

Many new public use facilities need to be added and many are in desperate need of replacement or expansion.

D. PROVIDE THE INCREASES IN THE STATE PARK MAINTENANCE BUDGET NECESSARY TO ADEQUATELY MAINTAIN AND OPERATE THE EXISTING STATE PARKS FOR PUBLIC USE:

The tremendous increase in visitation is resulting in increased maintenance problems. Funds are still insufficient to adequately maintain and operate the state parks for the volume of public use they receive. Much more needs to be done to carry out programs that provide for public use of the natural features of the parks.

E. PROVIDE FUNDS FOR THE DEVELOPMENT OF NEW STATE PARKS:

Once acquired, new state parks will need public use facilities, roads, parking areas, water and sanitary facilities.

All of these recommendations should be carried out in strict accordance with PRINCIPLES GOVERNING THE ESTABLISHMENT, EXTENSION AND DEVELOPMENT OF THE STATE PARK SYSTEM OF THE STATE OF NORTH CAROLINA.

The "Preliminary Plan for Recreation Resource Development in North Carolina" prepared by the National Park Service in 1961 is another valuable guide in the determination of future acquisitions. It must be noted that some areas recommended for inclusion into the state park system by this report have already been lost. This requires that this report be constantly reviewed and revised.

STATE PARKS PUBLIC USE RECORD

STATE PARK	TOTAL ATTENDANCE		PICKNICKERS		CAMPER FAMILY		DAYS ORGANIZED		SWIMMERS		HIKERS		CABINS		FISHING	
	FY 1965	FY 1966	FY 1965	FY 1966	FY 1965	FY 1966	FY 1965	FY 1966	FY 1965	FY 1966	FY 1965	FY 1966	FY 1965	FY 1966	FY 1965	FY 1966
Cliffs of the Neuse	143,610	156,101	43,737	49,851	6,501	8,225			18,889	26,976	10,719	10,832			160	254
Duke Power		113,903		16,410						10,014		720				2,952
Fort Macon	562,395	590,479	23,577	28,320					99,345	106,879	5,621	4,251			33,812	33,677
Hammocks Beach	6,407	7,573	23	189	79	27			1,435	1,710		366			528	1,065
Hanging Rock	173,238	179,496	44,641	58,638	19,460	19,272			24,637	31,753	8,883	19,283	3,446	3,448		
Jones Lake	53,491	67,184	39,024	53,111	639	939			11,237	13,457					153	187
Morrow Mountain	310,455	342,165	126,816	140,583	15,434	15,641	233		15,242	17,885	36,466	42,264	2,402	2,054	6,307	7,338
Mount Jefferson	32,610	33,527	11,811	11,780							16,298	16,419				
Mount Mitchell	307,438	308,197	56,458	53,512	3,841	3,804					36,231	26,088				
Pettigrew	22,326	17,923	4,192	2,980	1,029	797						70			7,465	7,497
Reedy Creek	70,586	49,754	56,792	41,984	635		3,890	2,891			32,470	29,254			830	1,203
Singletary Lake	5,632	5,855			5		2,363	2,595							80	188
Weymouth Woods		756									360	396				
William B. Umstead	245,990	255,455	71,375	70,778	11,675	11,578	16,899	20,328			23,572	23,275			1,181	1,796
	1,934,178	2,128,368	478,446	528,136	59,298	60,283	23,385	25,814	170,785	208,674	170,620	173,218	5,848	5,502	50,516	56,157

TRAVEL INFORMATION AND PROMOTION

Annual spending in North Carolina by transients reached the half-billion-dollar mark during the biennium which ended June 30, 1966. During the last half of the period more than 30 million out-of-state visitors traveled an estimated five and one-half billion miles in North Carolina and contributed $345 million to the State's economy. Spending by North Carolina residents, traveling within the State during 1965, amounted to $215 million for a record-breaking $560 million total.

The travel industry's growth rate of nine per cent annually remained higher than that of other retail businesses in the State.

Commensurate with the accelerated rate of spending by the traveling public in North Carolina was a parallel increase in the demand for services by the Travel and Promotion Division. The Division processed 384,780 travel inquiries during the biennium and distributed 3,525,654 pieces of travel and promotional literature. In addition, the Division produced 3,080,443 copies of its own publications, answered 1,580 inquires from persons interested in moving to North Carolina, and produced and distributed 148 news releases. Staff members also produced 230 radio and television shows during the biennium and 14,518 photographs were distributed. The five motion pictures produced by the Division—"North Carolina", "Variety Vacationland", "State of Enchantment", "Kitty Hawk to Calabash", and "Land of Beginnings"—were shown before 10,217 audiences and telecast by 421 television stations.

Significant administrative changes occurring within the Division during the 1964-66 biennium were the appointment in March, 1965, of Bill F. Hensley as Director of the Travel and Promotion Division and the appointment in August, 1965, of members of the Travel and Promotion Committee of the Board of Conservation and Development. J. W. York of Raleigh was named Committee chairman, and appointed to serve with him were C&D board members Arthur W. Corpening of High Point and John Harden of Greensboro. Mr. Hensley became the Division's first full-time director since the death in December, 1963, of former director Charles J. Parker.

North Carolina as a year-round vacation state was the dominant theme of the Division's promotional efforts during the biennium. Staff members covered hundreds of vacation events throughout the State, many of which were being offered for the first time, and supplemented the work of local and regional promotion groups. There was a marked increase in the number of facilities which offer high-altitude winter activities, such as snow skiing, along with a parallel increase in the number of inquiries concerning these activities.

Golf, for which North Carolina has become increasingly popular among travelers who enjoy the game, was the subject of an intensive promotional campaign. A highlight of the continuing effort was a five-day tour of Eastern North Carolina golf courses in early 1966 by a group of Canadian golf pros. The Canadians were invited to the State to see for themselves why North Carolina is recognized throughout a remarkably widespread area of the country as a year around golfing mecca. Preliminary work began during the biennium toward production of a golf brochure and directory of Tar Heel courses.

The Division continued to advise local and regional promotion groups on matters pertaining to the travel industry. Throughout the period, Division personnel actively supported efforts for better roads, highway and community beautification, and improved tourist accommodations. The Division stressed the importance of "package tours" at vacation and resort areas to attract travelers who want to know what a trip or vacation is going to cost before they leave home. The lack of package tours in North Carolina was cited as one of the greatest disadvantages in the State's travel promotion program. Hotel and motel owners also were urged to pay commissions to travel agents who make arrangements for travelers at their facilities.

The Division obtained membership and became actively engaged in activities of the Southern Travel Directors Council, organized to promote travel in the South.

National publicity during the period was excellent. Feature articles about the State and its many resources and attractions appeared in numerous magazines and newspapers coast-to-coast. North Carolina was the subject of a 30-minute travel show on CBS-TV in 1965, as well as a 30-minute ABC-TV program on fishing at Currituck. The Division assisted numerous writers and photographers from national publications and from foreign countries. Cooperation of the North Carolina press, radio and television remained outstanding.

Also during the biennium, the Division expanded its scope of operations to place greater emphasis on the State's outdoor recreation opportunities and to expedite the production of promotional material. An important addition to the staff was Joel Arrington, to the position of Outdoor Editor, whose responsibilities encompass a wide range of activities involving the promotion of hunting, fishing and other outdoor recreation. The new position of Publications Editor, created to facilitate the production of an increasing number of specialized publications, was filled by Arnold Kirk on July 1, 1966.

ADVERTISING

A continuing program of specialized advertising remained a major tool in promoting North Carolina's travel attractions and industrial potentials. In March, 1965, the Advertising Committee selected the J. T. Howard Agency, Raleigh, to handle the state's advertising account for the two-year period ending June 30, 1967. The account had been with the Bennett Agency, High Point, during the first half of the biennium.

The selection of the Howard Agency and the ensuing study of the State's advertising needs resulted in the development of an entirely unique advertising campaign. In previous years, state advertising generally extolled North Carolina's widely diverse natural assets—its moderate climate, beaches, mountains, placid lakes, etc. The new campaign proposed to draw upon the legends and folklore of the various areas, combining the natural appeal of the localities with colorful and exciting stories of their pasts. The Travel and Promotion Committee felt North Carolina could get the most for its advertising dollar, and more favorable results from the Division's promotional efforts, by promoting those things which North Carolina has that other states do not have. Among these are Old Salem, the Biltmore House, Tryon Palace, the Cherokee Indian Reservation and many others. One advertisement which has appeared in a number of national publications tells the story of Calico Jack and the infamous pirate Blackbeard, who lived and plundered along the North Carolina coast during the 18th Century. The mystery of the Brown Mountain lights was the subject of another advertisement which was widely acclaimed by regional and national promotion organizations. Bascomb Lamar Lunsford, North Carolina's "Grand Old Man of Folk Music", is featured in an ad promoting the State's popular folk festivals. The humorous story of an 1867 shipwreck which caused 10,000 stovepipe hats to wash ashore on the Outer Banks, providing elegant headdress for Banks residents, is told in an advertisement entitled "North Carolina's Incredible Shipwreck". For its outstanding and unique advertising campaign during the last half of the biennium, North Carolina was named winner of an "Award of Merit" for excellence in travel advertising by the National Association of Travel Organizations. The award is considered the travel industry's highest honor.

SPECIAL PROJECTS

The Division continued to work closely with the Travel Council of North Carolina, chambers of commerce throughout the State, local area development organizations and various other individuals and groups interested in promoting the travel industry.

In 1964, the Division cooperated with arrangements for the Governor's Travel Information Conferences, and with the resorts of Pinehurst and Southern Pines for a meeting of the Middle Atlantic Chapter of the Society of American Travel Writers. It also provided photographs for new folders

and information racks which were placed in State Parks during the 1965 season.

The Division's role in introducing employees of new industries to North Carolina's travel and recreational opportunities was emphasized in early 1965 when literature was made available to International Business Machines (IBM) Corporation employees who were moving to the Raleigh area. Travel literature also was made available to delegates attending national conventions.

Also during the first half of 1965, the Travel and Promotion Division handled publicity for the Governor's Agricultural-Industrial Tour, a five-day statewide program in which more than 200 business and farm leaders participated. During the weekend of May 13-16, 1965, the Division joined Fontana Village in playing host to the Ohio Outdoor Writers Association. The State of Ohio continued to be a prominent source of out-of-state visitors to North Carolina, and the outdoor writers of that state were invited to North Carolina to enjoy and write about the outdoor recreation opportunities available here.

In early 1966, the Division handled arrangements for the First Lady's Tour of North Carolina Sites and Scenes, which covered more than 1,200 miles in five days. Purpose of the tour was to emphasize the need for an expanded beautification program. Mrs. Dan Moore was accompanied by 33 ladies from throughout the State and the group visited historic and scenic areas, gardens and State parks.

Also during the final six months of the biennium, the Division, in cooperation with Fontana Village, hosted a meeting of the Florida Outdoor Writers Association. The meeting served to introduce many of the writers to the varied outdoor recreation opportunities available in the North Carolina mountains. The Division organized a 30-minute color television program on North Carolina for a Baltimore, Maryland, station and assisted with the Governor's Beautification Conference. Once a week for 14 weeks, either the director or travel editor addressed classes of the State Highway Patrol's In-Service training course at Chapel Hill, stressing the importance of the travel industry to North Carolina and how patrolmen can be helpful to travelers.

TRAVEL SHOWS

Participation in regional and national travel shows remained an integral part of the Division's work during the biennium. In February and March of 1965 the Division staffed the State's 40-foot travel exhibit at shows in Cincinnati, Cleveland and Chicago. The three shows, coupled with an advertisement in **Reader's Digest**, resulted in a record-breaking 71,296 travel inquiries during the month of March.

At the Canadian National Exhibition in Toronto, in August, 1965, the North Carolina travel booth attracted 15,810 persons who were actively seeking North Carolina travel information. Also during August, the Division assisted a travel mission to Canada in which travel industry leaders and other prominent North Carolinians called on writers and travel agents.

During the first six months of 1966, the State participated in travel shows at Columbus, Ohio, and Chicago and the Southeastern Flower and Garden Show in Charlotte. Preliminary plans were being made during the last half of the biennium for participation in the 1966 Canadian National Exhibition, scheduled in August, and for a three-week trade and travel mission to Europe in October and November.

WELCOME CENTERS

An economic analysis and survey of North Carolina's travel business in 1965, conducted by Lewis C. Copeland of the University of Tennessee's College of Business Administration, Department of Statistics, revealed that North Carolina is receiving 2.9 per cent of the nation's travel but only 1.9 per cent of the nation's travel dollar. The survey report indicated that while the State had succeeded in attracting tourists to North Carolina, it had

not capitalized on the available travel market. Following extensive review of the "Copeland Report" and a study of promotional programs in other states, the Travel and Promotion Committee sought legislative approval of a plan to establish seven "welcome centers" at key locations along major highways leading into the State. The proposed centers would provide rest facilities and make available to travelers a multitude of information concerning the State's travel attractions. The request for funds to construct and staff the proposed centers was prepared for submission to the Advisory Budget Commission in late September.

The Travel and Promotion Committee also included in its budgetary request a substantial increase in the State advertising budget and additional clerical staff to handle the increased administrative workload. A study of advertising costs revealed that while the State's advertising budget had remained unchanged during the previous four years, the cost of advertising space had increased 28 per cent, production costs were up 29 per cent and printing costs had increased 15 per cent. In 1965, North Carolina ranked fifth among the eleven Southeastern states in travel advertising and eighth in the amount of money spent for industrial advertising.

MEDIA LIST

North Carolina's travel advertising was published or broadcast in the following*:

NEWSPAPERS

Atlanta Journal
Atlanta Magazine
Batimore News-American
Baltimore Sun
Birmingham News
Charleston Gazette-Mail
Charleston News & Courier-Post
Chicago Sun-Times & Daily News
Chicago Tribune & Daily American
Christian Science Monitor
Cincinnati Enquirer
Cleveland Plain Dealer
Cleveland Press
Columbus Dispatch
Detroit News
Florida Times-Union
Knoxville News-Sentinel
Louisville Courier-Journal Times
Miami Herald
Miami News
Newark News
New York Herald Tribune
New York News
New York Times
New York World-Telegram & Sun
Philadelphia Bulletin
Philadelphia Inquirer
Pittsburgh Press & Post-Gazette
Richmond Times-Dispatch News Leader
St. Louis Globe Democrat
St. Louis Post Dispatch
Tallahassee Democrat
Tampa Tribune
Washington Daily News
Washington Post
Washington Star
Wilmington News-Journal

* In-state media not used at the request of N. C. Press Association and N. C. Association of Broadcasters.

TELEVISION

Atlanta, Ga.—WAII-TV, WAGA-TV, WSB-TV
Augusta, Ga.—WJBF-TV, WRDW-TV
Baltimore, Md. WMAR-TV, WBAL-TV, WJZ-TV
Birmingham, Ala.—WBRC-TV
Charleston, S. C.—WUSN-TV, WCSC-TV
Chattanooga, Tenn.—WTVC-TV, WRCB-TV, WDEF-TV
Cincinnati, Ohio—WLW-TV, WKRC-TV
Columbia, S. C.—WIS-TV
Columbus, Ohio—WLWC-TV, WTVN-TV
Dayton, Ohio—WLWD-TV, WHIO-TV
Indianapolis, Ind.—WLW-TV, WISH-TV
Jacksonville, Fla.—WFGA-TV,WJXT-TV
Knoxville, Tenn.—WATE-TV
Lexington, Ky.—WKYT-TV, WLEX-TV
Nashville, Tenn.—WSIX-TV, WSM-TV
New York, N. Y.—WABC-TV, WCBS-TV, WNBC-TV, WNEW-TV
Norfolk, Va.—WVEC-TV, WTAR-TV
Orlando, Fla.—WDBO-TV, WFTV-TV
Philadelphia, Pa.—WRCV-TV
Pittsburgh, Pa.—KDKA-TV, WTAE-TV
Richmond, Va.—WXEX-TV, WRVA-TV,WTVR-TV
Savannah, Ga.—WSAV-TV, WTOC-TV
St. Petersburg, Fla.—WSUN-TV
Tampa, Fla.—WTVT-TV, WFLA-TV
Tallahassee, Fla.—WCTC-TV
Washington, D. C.—WRC-TV, WTOP-TV

MAGAZINES

American Motorist
Better Homes & Gardens
Esquire
Golf
Golf & Club News
Golf Digest
Holiday
Life
NEA Journal
Woman's Day
Cosmopolitan
Michigan Motor News
Ohio Motorist
Popular Photography
Christian Herald
McCall's
National Geographic
New Yorker
Reader's Digest
Saturday Evening Post
Southern Living
Time
Redbook
TV Guide
Salt Water Sportsman
Cincinnati Motour
New York Motorist

INDUSTRIAL ADVERTISING

Area Development
Business Management
Business Week
Dun's Review
Chemical Week
Steel
Fortune
Nation's Business
Wall Street Journal
Industrial Research
Electronics

INQUIRIES SERVICED

Received	Keyed	Non-Keyed
384,780	163,416	221,419

PUBLICATIONS

Produced		Distributed	Inventory
No. Subjects	No. Copies	No. Copies	(Approximate)
237	3,080,443	3,525,654	830,715 (average)

NEWS, FEATURE & PICTURE OPERATIONS

News & Feature Releases	TV-Radio Shows
148	230

Still Photography Prints Distributed	Motion Pictures	
	Audience Showings	TV
14,518	10,217	421

SPECIAL PROJECTS

No. Projects	Literature Used	Homeseeker Inquiries
1,093	410,682	1,580

BIENNIUM JULY 1, 1964-JUNE 30, 1966

Media	No. Advertisements	
Newspapers, Magazines	204 in 75 publications	
Television	936 over 52 stations	
TOTAL ADVERTISING COST		$750,554.31

THE BUDGETS

CONDENSED FINANCIAL STATEMENTS

For the Biennium Beginning July 1, 1964 and Ending June 30, 1966

Victor W. Barfield, Budget Officer

MAINTENANCE FUNDS

Statement of Receipts and Disbursements

	Fiscal Year 1964-65	Fiscal Year 1965-66
Total Disbursements	$6,008,198	$6,858,302
Less: Receipts	1,940,226	2,301,932
General Fund Appropriation	$4,067,972	$4,556,370
SUMMARY BY PURPOSE		
I. ADMINISTRATION		
Disbursements—Appropriation	$ 258,542	$ 183,237
II. COMMERCE AND INDUSTRY		
Disbursements	$ 487,047	$ 523,962
Less: Receipts	5,005	103
Appropriation	$ 482,042	$ 523,859
III. TRAVEL AND PROMOTION		
Disbursements	$ 609,915	$ 596,207
Less: Receipts	147	985
Appropriation	$ 609,768	$ 595,222
IV. GEODETIC SURVEY		
Disbursements—Appropriation	$ 68,569	$ 72,246
V. MINERAL RESOURCES		
Disbursements	$ 80,775	$ 71,891
Less: Receipts	1,849	3,621
Appropriation	$ 78,926	$ 68,270
FORESTRY		
VI. FIRE CONTROL		
Disbursements	$2,403,718	$2,998,411
Less: Receipts	966,250	1,159,219
Appropriation	$1,437,468	$1,839,192
VII. GENERAL FORESTRY		
Disbursements	$ 103,622	$ 165,488
Less: Receipts	23,663	43,456
Appropriation	$ 79,959	$ 122,032
VIII. FORESTRY MANAGEMENT		
Disbursements	$ 254,376	$ 325,393
Less: Receipts	128,114	167,973
Appropriation	$ 126,262	$ 157,420
IX. NURSERIES		
Disbursements	$ 294,308	$ 346,635
Less: Receipts	295,899	313,775
Appropriation	$ (1,591)	$ 32,860
X. BLADEN LAKES STATE FOREST		
Disbursements	$ 201,077	$ 208,018
Less: Receipts	201,117	208,092
Appropriation	$ (40)	$ (74)

XI. STATE PARKS		
Disbursements	$ 546,603	$ 640,464
Less: Receipts	146,991	151,302
Appropriation	$ 399,612	$ 489,162
XIII. COMMUNITY PLANNING-ADMINISTRATION		
Disbursements	$ 139,710	$ 163,438
Less: Receipts	50,451	48,356
Appropriation	$ 89,259	$ 115,082
XIV. COMMERCIAL AND SPORT FISHERIES		
Disbursements	$ 517,538	$ 562,912
Less: Receipts	120,740	162,652
Appropriation	$ 396,798	$ 400,260
XVI. FUNDS TRANSFERRED TO 1965-66	$ 42,398	
FUNDS TRANSFERRED FROM 1964-65		$ (42,398)

RELATED BUDGETS MAINTAINED BY DEPARTMENT OF CONSERVATION AND DEVELOPMENT

Statement of Receipts and Disbursements

	Fiscal Year 1964-65	Fiscal Year 1965-66
KERR RESERVOIR DEVELOPMENT COMMISSION SPECIAL FUND		
Credit Balance—Beginning	$ 3,146	$ 2,184
Receipts	18,938	28,877
	$ 22,084	$ 31,061
Less: Disbursements	19,900	19,800
Credit Balance—Ending	$ 2,184	$ 11,261
KERR RESERVOIR DEVELOPMENT COMMISSION OPERATING FUND		
Disbursements	$ 53,950	$ 62,306
Less: Transferred From Special Fund	19,900	19,800
Appropriation	$ 34,050	$ 42,506
N. C. COORDINATING FILM UNIT SPECIAL FUND		
Credit Balance—Beginning	$ 4,180	$ 5,613
Receipts	230,950	8,489
	$ 235,130	$ 14,102
Less: Disbursements	229,517	8,763
Credit Balance—Ending	$ 5,613	$ 5,339
STATE PLANNING STUDY SPECIAL FUND		
Credit Balance—Beginning	$ 15,554	$ —0—
Receipts	2,140	—0—
	$ 17,694	$ —0—
Disbursements	17,694	—0—
Credit Balance—Ending (Project Completed June 1965)		

AUXILLARY SUPPORTING FUNDS

Statement of Receipts and Disbursements

	Fiscal Year 1964-65	Fiscal Year 1965-66
DIVISION OF COMMUNITY PLANNING SPECIAL FUND		
Disbursements	$ 535,612	$ 543,069
Less: Receipts	466,812	527,380
Credit Balance From Preceding Years	$ 68,800	$ 15,689
ATLANTIC STATES MARINE FISHERIES COMMISSION		
Appropriations—Contingency and Emergency Fund (Payment For 1965-66 Included in Commercial and Sports Fisheries General Fund Appropriation)	$ 1,500	$ —0—
COMMERCIAL AND SPORTS FISHERIES ADVISORY BOARD		
Appropriation—Contingency and Emergency Fund	$ 2,000	$ —0—
Disbursements	889	—0—
Reverted to General Fund (Appropriation For 1965-66 Included in Commercial and Sports Fisheries Operating Budget)	$ 1,111	$ —0—
COMMERCIAL AND SPORTS FISHERIES STUDY COMMISSION		
Appropriation—Contingency and Emergency Fund	$ 1,500	$ —0—
Disbursements	652	—0—
Reverted To General Fund	$ 848	$ —0—
NORTH CAROLINA SEASHORE COMMISSION		
Disbursements	$ 21,657	$ —0—
General Fund Appropriation (Transferred to Dept. Water Resources 7-1-65)	$ 21,657	$ —0—
EXECUTIVE AIRCRAFT OPERATIONS SPECIAL FUND		
Credit Balance—Beginning	$ —0—	$ 3,207
Receipts	10,409	115,640
	$ 10,409	$ 118,847
Less: Disbursements	7,202	104,291
Credit Balance—Ending	$ 3,207	$ 14,556

CAPITAL IMPROVEMENT FUND OF 1959

Statement of Receipts and Disbursements

REVENUE		TO DATE
Appropriation—Public Laws of 1959		$ 1,173,500
Less: Transferred to Dept. of Water Resources		600,000
Appropriation: Conservation and Development		$ 573,500
Rental on Phosphate Areas	$ 27,742	
Transferred from Permanent Improvement Fund of 1949, 1947, 1949	46,946	
Sale of Boats	581	
Insurance—"Cape Fear"	9,795	
Sale of Land	23,463	
Protesting Oyster Bottom Leases	325	
Sale of Lumber, William B. Umstead State Park	7,290	
Lease to Town of Morehead City	1	
Sale of Land Beaufort County	9,766	125,909
Total Receipts		$ 699,409
Total Disbursements		609,920
Unexpended Balance		$ 89,489

PROJECTS	APPROPRIATION	EXPENDITURES	UNEXPENDED
Development of Bear Island State Park	$ 172,000	$ 165,845	$ 6,155
Ft. Macon Beach Erosion Control	151,926	151,919	7

Repairs to Building—Morrow Mountain State Park	1,500	1,500	—0—
Repairs to Building—Pettigrew State Park	7,000	6,993	7
Land Acquisition	179,702	142,053	37,649[3]
Building—Little River State Nursery	26,180	26,171	9
Irrigation System, Clayton Nursery	9,200	9,188	12
Irrigation System, Little River Nursery	18,955	18,955	—0—
Towermen Residence, Edgecombe County	7,000	7,000	—0—
Towermen Residence, Southern Pines	7,000	7,000	—0—
Road to Mt. Mitchell Tower Site	1,000	1,000	—0—
Tower Cabin, Mitchell County	3,000	3,000	—0—
Tower Cabin, Cleveland County	1,865	1,864	1
Tower, Caswell County	8,800	8,800	—0—
Tower, Pamlico County	7,745	7,745	—0—
Dam, Duke Power State Park	15,324	15,323	1
Boat "Cape Fear"	14,276	14,276	—0—
Barge, "Rose I"	6,300	6,300	—0—
Transferred to Capital Improvement Fund of 1963	2,255	2,255	—0—
Phosphate Area Development	403	402	1
Report on Development of N. C. Mineral Resources	8,000	7,801	199
Beaufort County Phosphate Survey	10,244	—0—	10,244[1]
Mineral Staff Geologist	4,800	4,530	270
Unencumbered	34,934	—0—	34,934[6]
TOTALS	$ 699,409	$ 609,920	$ 89,489

Status at November 15, 1966

[1] Project now complete

[2] Project awaiting land acquisition

[3] Partially completed—balance in process

[4] Presently under construction

[5] Plans and specifications being drawn

[6] Receipts from phosphate leases and sales not committed in projects.

CAPITAL IMPROVEMENT FUND OF 1963

Statement of Receipts and Disbursements

REVENUE		TO DATE
Appropriation, Pubic Laws of 1963		$ 1,391,500
Transferred From Capital Improvement Funds of 1957 and 1959	$ 33,095	
Federal Cooperation, Beach Erosion Control	45,360	
Federal Cooperation—Toxaway Tower Maintenance	8,900	87,355
Total Receipts		$ 1,478,855
Less: Disbursements		1,197,085
Unexpended		$ 281,770

PROJECTS—FORESTRY	APPROPRIATION	EXPENDITURES	UNEXPENDED
Transferred to 1965 Appropriation	$ 2,409	$ 2,409	$ —0—
Lookout Tower, Pamlico County	4,341	4,341	—0—
Headquarters Bldg., Hyde County	46,000	45,030	970[1]
Shop Building, Hyde County	38,000	36,965	1,035[1]
Equipment Shelter, Clayton	12,500	12,500	—0—
Equipment Shelter, Chapel Hill	10,000	—0—	10,000[2]
Radio Shop, Rocky Mount	7,500	7,495	5
Shop Building, Sylva	52,500	46,499	6,001[3]
Four Equipment Shelters	38,000	20,955	17,045[4]
Headquarters Bldg., Rockingham	61,000	36,676	24,324[1]
Headquarters Bldg., Elizabeth City	58,500	58,340	160[1]
Equipment Shelter, New Bern	12,000	9,044	2,956[3]
Tower Ladders, Ashe and Yancey Counties	1,500	—0—	1,500[3]
Lookout Tower, Robeson County	12,051	12,051	—0—
Residence, Sampson County	10,454	10,454	—0—
Toxaway Road Maintenance	8,900	5,526	3,374[1]
Total Forestry	$ 375,655	$ 308,285	$ 67,370

PROJECTS—STATE PARKS	APPROPRIATION	EXPENDITURES	UNEXPENDED
Cliffs of Neuse	$ 67,794	$ 36,638	$ 31,156[23]
Fort Macon	340,272	340,272	—0—
Hanging Rock	107,073	96,729	10,344[1]
Jones Lake	40,500	40,500	—0—
Morrow Mountain	72,483	71,445	1,038[1]
Mount Jefferson	33,450	4,771	28,679[3]
Mount Mitchell	193,749	54,805	138,944[3]
Reedy Creek	38,017	38,017	—0—
William B. Umstead	59,862	55,706	4,156[1]
Duke Power	150,000	149,917	83[1]
Total State Parks	$ 1,103,200	$ 888,800	$ 214,400
TOTALS	$ 1,478,855	$ 1,197,085	$ 281,770

CAPITAL IMPROVEMENT FUND OF 1965

Statement of Receipts and Disbursements

REVENUE		TO DATE
Appropriation, Public Laws of 1965		$ 787,000
Transferred From Capital Improvement Fund of 1963	$ 2,409	
Proceeds From Sale of Stock by Mrs. James Boyd	11,579	13,988
Total Receipts		$ 800,988
Less: Disbursements		68,649
Unexpended		$ 732,339

PROJECTS—COMMERCIAL AND SPORTS FISHERIES

	APPROPRIATION	EXPENDITURES	UNEXPENDED
85-90 Foot Motor Cutter	$ 359,000	$ 11,254	$ 347,746[4]
40-45 Foot Patrol Boat	35,000	28,375	6,625[1]
Total Commercial and Sports Fisheries	$ 394,000	$ 39,629	$ 354,371

PROJECTS—FORESTRY

Lookout Tower, Wayne County	$ 15,000	$ 11,139	$ 3,861[4]
Asheville District Office Bldg.	22,409	1,028	21,381[4]
Tower Residence, Pender County	14,000	—0—	14,000[5]
Total Forestry	$ 51,409	$ 12,167	$ 39,242

PROJECTS—STATE PARKS

Ft. Macon State Park	$ 45,000	$ —0—	$ 45,000[2]
Duke Power State Park	222,000	13,152	208,848[6]
Spillway Gate—Lake Waccamaw	12,000	—0—	12,000[5]
Boat Facilities, Pettigrew	15,000	2,140	12,860[4]
Interpretation Center, Weymouth Woods	61,579	1,561	60,018[4]
Total State Parks	$ 355,579	$ 16,853	$ 338,726
Totals	$ 800,988	$ 68,649	$ 732,339

CAPITAL IMPROVEMENT FUND OF 1957

Statement of Receipts and Disbursements

REVENUE		TO DATE
Appropriation, Public Laws of 1957		$688,000
Sale of Timber	$ 4,910	
Department of Motor Vehicles	1,489	
Contribution—Stanley County	5,634	
Sale of Obsolete Buildings	1,115	
Forfietures of Plans and Specifications	200	13,348
Total Receipts		$701,348
Less: Disbursements	$672,407	
Transferred to Capital Improvement Fund of 1963	27,066	699,473
Reverted to General Fund		$ 1,875

PROJECTS STATE PARKS	APPRO- PRIATION	EXPENDI- TURES	UNEXPENDED
Cliffs of Neuse	$ 89,100	$ 87,628	$ 178
Fort Macon	8,547	8,547	-0-
Hanging Rock	65,569	62,992	4
Jones Lake	19,792	19,789	3
Morrow Mountain	77,426	75,248	4
Mount Jefferson Area	17,298	17,298	-0-
Mount Mitchell	155,353	150,031	123
Pettigrew	14,552	14,508	44
Reedy Creek	87,383	71,537	20
William B. Umstead	85,013	85,010	3
FORESTRY			
Lookout Towers	72,000	72,000	-0-
Little River Nursery Building	8,000	7,819	181
Transferred to Capital Improvement Fund of 1963		77,066	
Unencumbered	1,315	-0-	1,315
Totals	$701,348	$699,473	$ 1,875

KERR RESERVOIR DEVELOPMENT COMMISSION
CAPITAL IMPROVEMENT FUND OF 1965

Statement of Receipts and Disbursements

REVENUE	TO DATE
Appropriation, Public Laws of 1965	$ 5,000
Less: Disbursements	-0-
Unexpended Balance	$ 5,000

KERR RESERVOIR DEVELOPMENT COMMISSION
CAPITAL IMPROVEMENT FUND OF 1963

Statement of Receipts and Disbursements

REVENUE	TO DATE
Appropriation, Public Laws of 1963	$ 157,067
Less: Disbursements	131,729
Unexpended Balance	$ 25,338

PROJECTS	APPRO- PRIATION	EXPENDI- TURES	UNEXPENDED
Kimball Point	$ 37,500	$ 34,404	$ 3,096
County Line Point	$ 27,267	26,145	1,122
Bullocksville Park	16,200	8,079	8,121
Satterwhite Point	53,600	41,658	11,942
Flemington Road Marina	9,500	9,495	5
Williamsboro Wayside	4,000	3,999	1
Park Improvements	8,000	7,949	51
Nutbush Bridge Area	1,000	-0-	1,000
Totals	$157,067	$131,729	$ 25,338

KERR RESERVOIR DEVELOPMENT COMMISSION
CAPITAL IMPROVEMENT FUND OF 1961

Statement of Receipts and Disbursements

REVENUE	TO DATE
Appropriation, Public Laws of 1961	$ 91,700
Less: Disbursements	80,471
Unexpended	$ 11,229

PROJECTS	APPROPRIATION	EXPENDITURES	UNEXPENDED
Community Building	$ 27,000	$ 26,992	$ 8
Central Washhouse, Nutbush Bridge	11,000	-0-	11,000
Tent Camp Area, Satterwhite Point	19,100	18,997	103
Maintenance Shop, Satterwhite Point	10,400	10,344	56
Ranger Residence, Satterwhite Point	6,500	6,497	3
Grounds Improvement	3,022	3,022	-0-
Picnic Shelter, Warren County	4,678	4,677	1
Sales Building, Flemington Road Marina	10,000	9,942	58
TOTALS	$ 91,700	$ 80,471	$ 11,229

KERR RESERVOIR DEVELOPMENT COMMISSION
CAPITAL IMPROVEMENT FUND OF 1959

Statement of Receipts and Disbursements

REVENUE	TO DATE
Appropriation, Public Laws of 1959	$ 40,000
Less: Disbursements	39,916
Unexpended	$ 84

PROJECTS	APPROPRIATION	EXPENDITURES	UNEXPENDED
Bullocksville Park	$ 6,950	$ 6,922	$ 28
Satterwhite Point	21,087	21,082	5
Warren County Area	6,384	6,339	45
Nutbush Bridge Area	1,779	1,776	3
General Area	3,800	3,797	3
TOTALS	$ 40,000	$ 39,916	$ 84

RESTORATION OF TRYON PALACE
PERMANENT IMPROVEMENT FUND OF 1963

Statement of Receipts and Disbursements

REVENUE		TO DATE
Proceeds First Maude Latham Trust Fund		$ 118,385
Proceeds Second Maude Latham Trust Fund		619,444
Proceeds Residue Maude Latham Estate Fund		2,534,019
Rentals Collected		2,885
Total Revenue		$3,274,733
Less: Disbursements		
Architects Fees and Furnishings	$ 784,728	
Documentary Research	14,257	
Physical Research	182,718	
New Construction	1,649,961	
Land Acquisition and Clearing	453,060	
Gardens	1,418	
Repairs and Restoration Projects	183,646	
Total Disbursements		$3,269,788
Unexpended Funds		$ 4,945

The same year America began fighting for independence, North Carolina began planning its system of higher education.

America faced an uncertain future back in 1776 when delegates to North Carolina's provincial congress met at Halifax. But in a bold, confident act that looked beyond the immediate struggle, that early congress enacted a constitutional provision for the establishment of the first state university in the new world.

The impetus of that daring step established the pattern for the continued growth of higher education in North Carolina.

Today, 63 state-supported and private colleges and universities are in North Carolina—more than in any other Southeastern state. The Tar Heel State also has the largest faculty, more full-time undergraduate students and the largest vocational enrollment in the Southeast.

In technical education for industrial workers, North Carolina leads the entire nation.

To maintain and expand its leadership, North Carolina spends more for the operation of its colleges and universities than any other Southeastern state.

If you want to locate a plant near a source of highly trained, educated people, call or write Governor Dan Moore or Dan E. Stewart, Director, Department of Conservation and Development, Raleigh, N. C.

It's the smart thing to do.

NORTH CAROLINA

NCDPR – PARTF Section - 0087

Poor Captain Lopez. He planned the plunder of Old Brunswick Town, and ended up making a contribution to the church.

In 1748 a Spanish privateer rounded Cape Fear to sail up river to Old Brunswick Town. While his men stripped the jewels from the ladies' necks, outraged citizens prepared to give battle.

When the smoke cleared, the Spaniards had fled. Stranded near shore was their galleon, laden with almost twice the town's treasure.

So Lopez's cargo went to build St. Philip's Church, whose walls, three feet thick, survived the burning of Brunswick by the British in 1776. When the ruins vanished under river sands, only St. Philip's marked the spot.

Captain Lopez was one of the earliest sightseers on our North Carolina coast. Travellers today can expect to come away with much more.

For last year, Old Brunswick Town was unearthed. An American Pompeii. Now visitors can roam cannon-scarred ruins, or admire china teacups and silver that graced a blood-and-thunder era.

On the farther bank, in a small museum near Fort Fisher, see relics taken from a Confederate blockade runner. And explore the U.S.S. North Carolina, a modern man-of-war, at its berth on Cape Fear River in Wilmington.

Discover Orton, a breath-taking plantation home. Drive miles through the blaze of azaleas and camellias in Greenfield and Airlee gardens. Or dig for doubloons on Money Island.

But first mail this coupon. We can't keep these treasures to ourselves any longer.

Send my complete guide to North Carolina.

NAME_____

ADDRESS_____

CITY_____

STATE_____ ZIP CODE_____

Mail to Dept. 14H, Travel & Promotion Division, Dept. of Conservation and Development, Raleigh, N.C. 27602

North Carolina